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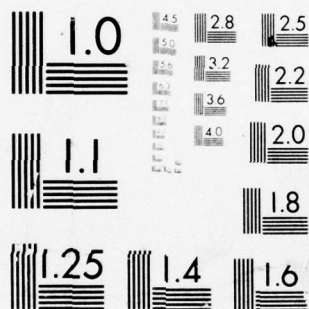
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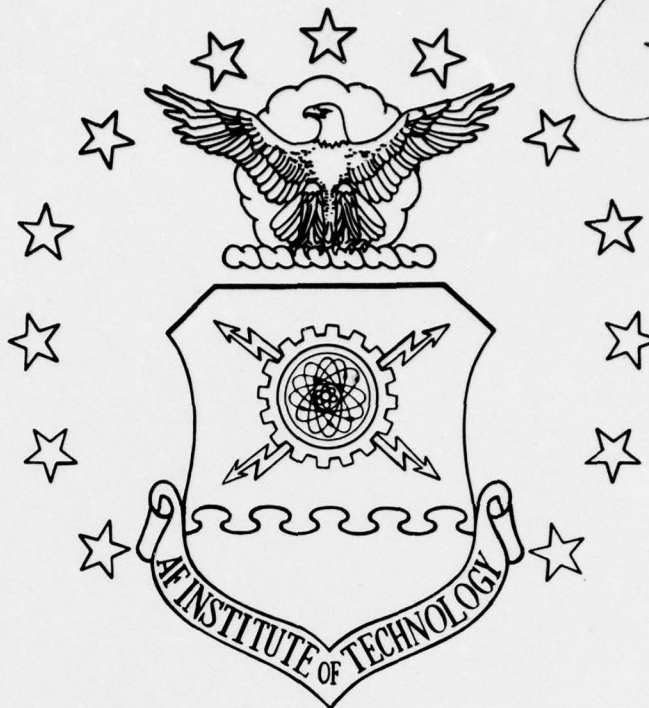
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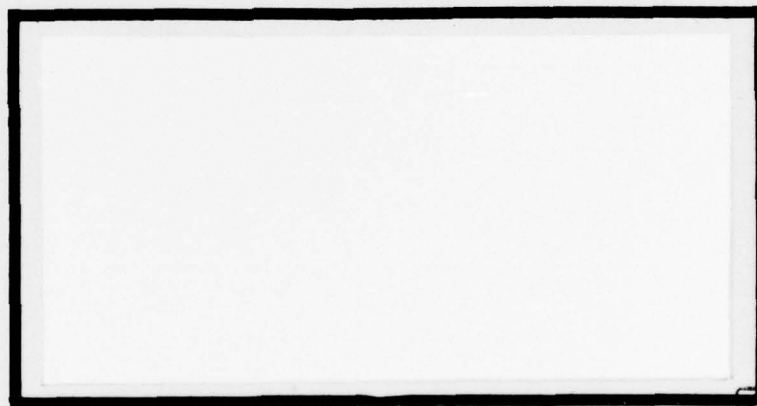
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A BEHAVIORAL ASSESSMENT OF
WORD PROCESSING CENTERS

Donald R. Joyner, Major, USAF
Jon N. King, Captain, USAF

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This research sought

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The purpose of this thesis was to determine the relationship of job satisfaction to other behavioral outcomes of personnel assigned to Word Processing Centers. The goals of this study were as follows: (1) determine any significant differences between the general job satisfaction of WPC personnel and national norms, (2) determine any significant correlation between the Job Descriptive Index factors and the behavioral outcomes of turnover and productivity. The findings of this study indicated that the general level of job satisfaction among WPC personnel was lower than the national norm. A moderate relationship existed between the behavioral outcome turnover with the level of satisfaction with work. A low relationship existed between the behavioral outcome turnover and the level of satisfaction with promotion and supervision. No significant relationship existed between productivity and the satisfaction factors of the JDI. The researchers concluded that the general level of job satisfaction of WPC personnel was lower than normal because of the dissatisfaction with the type of work within the WPC and the promotion system.

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A BEHAVIORAL ASSESSMENT OF WORD PROCESSING CENTERS

A Thesis

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology •

Air University

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Logistics Management

By

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Major, USAF

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January 1977

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This thesis, written by

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and

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has been accepted by the undersigned on behalf of the
faculty of the School of Systems and Logistics in partial
fulfillment of the requirements for the degree of

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COMMITTEE CHAIRMAN

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	vi
LIST OF FIGURES	vii

Chapter

I. INTRODUCTION	1
Statement of the Problem	3
Word Processing Concept	4
Human Aspects	7
Job Satisfaction	9
Two Conceptual Approaches	10
An Alternate Approach	16
Delimitations	19
Scope	19
Objective	20
Research Question	20
II. RESEARCH DESIGN AND METHODOLOGY	21
Introduction	21
Population and Sample	21
Variable Definition and Measurement	22
Turnover	24
Productivity	25

Chapter	Page
Satisfaction	25
Collection of Data	28
Data Analysis	30
Assumptions	32
Limitations	32
III. FINDINGS AND STATISTICAL ANALYSIS	33
Presentation of Data	33
IV. CONCLUSIONS AND RECOMMENDATIONS	48
Introduction	48
Conclusions	48
Discussion	50
Recommendations	53
APPENDICES	55
A. LETTER OF EXPLANATION FROM ASSOCIATE DEAN	56
B. QUESTIONNAIRE COMPLETION INSTRUCTIONS	58
C. DEMOGRAPHIC INFORMATION QUESTIONS	60
D. HOPPOCK JOB SATISFACTION SURVEY	62
E. JOB DESCRIPTIVE INDEX	65
F. TURNOVER PROBABILITY QUESTION	70
G. PRIVACY ACT STATEMENT	72
H. NORMATIVE RESPONSES TO THE JDI	74
I. HISTOGRAMS	77
J. FACTOR ANALYSIS RESULTS	92
SELECTED BIBLIOGRAPHY	96
A. REFERENCES CITED	97
B. RELATED SOURCES	100

LIST OF TABLES

Table	Page
1. Sample Selection Procedure	23
2. Statistical Descriptors of Three Samples Using Hoppock's Job Satisfaction Measure . . .	26
3. Scoring of JDI Items	30
4. Response to the Organizational Assessment Questionnaire	33
5. Hoppock Job Satisfaction Information--DOD Civil Service Employees Versus WPC Employees .	35
6. Partial Factor Matrix	38
7. Equivalent Reliability	41
8. JDI Scale Statistics for Female Employees Pooled Across 21 Plants	42
9. JDI Scale Statistics for WPC Employees	42
10. Significant Difference Between Means-- Two-Tailed Level of Significance	43
11. Correlation Coefficients of Turnover and Productivity with JDI Scales	44
12. Pearson Product-Moment Correlation <u>Above</u> Average Productivity	46
13. Pearson Product-Moment Correlation <u>Below</u> Average Productivity	46
14. Difference Test	47

LIST OF FIGURES

Figure	Page
1. Maslow's Hierarchy of Needs	11
2. Herzberg's Motivator-Hygiene Model	15
3. The Relationships Among the Job Characteristics, the Critical Psychological Satisfactions, and Personal Work Outcomes	17
4. Required Pearson Product-Moment Correlations . .	32

CHAPTER I

INTRODUCTION

The concept of Word Processing (WP) came to fruition in the 1960s as an outgrowth of technological developments with typing machines that were driven by electronic impulses rather than mechanical means. A magnetic recorder was used to store electronic impulses on a magnetic tape as the typing keys were pressed by the typist. By playing the tape recorder back, the stored electronic impulses would drive the typewriter at its maximum speed of approximately 150 words per minute while a perfect copy of the document was produced. If the typist needed to change a portion of the document, the tape recorder was stopped and the necessary changes were inserted manually. The tape recorder was again turned on and the remaining portion of the document was completed automatically (7:1-4).

The modern concept of WP has evolved from this relatively simple technological advance that allowed for increased typing speeds through the use of automated typewriters. According to Coggsall (6:18), WP includes any third-party function for communicating ideas. The third-party may be a person, a machine, or some combination (usually a secretary and some form of typewriter) that is the transmitter of information.

WP has evolved primarily in the private sector as a means to meet the information demands of business and to control the increased administrative costs of producing typed documents. Typing alone represents an annual expenditure of \$40 billion in the United States (21:3). A considerable portion of this expenditure is for salaries of administrative personnel. According to Kleinschrod (21:3), the average office employee is not engaged in productive work 12 percent of the time, and when the employee is engaged in productive work, 28 percent of the output is unusable due to inefficiencies and errors.

Large companies have reduced secretarial costs by as much as 45 percent through WP systems. Management consultants estimate that WP techniques usually can result in savings from \$120,000 to \$240,000 or 15 to 20 percent of the clerical payroll and overhead for each 100 work stations placed under a WP system (21:1). The director of the United States Government WP program, Ruth Thomas, projects a costs savings of 15 to 40 percent in typing costs alone for organizations that adopt WP (37:52).

Major General Bryan Shotts, Commander of Keesler Technical Training Center, Mississippi, said:

Although this system requires expensive sophisticated equipment, industry has proven that it is ultimately less expensive to process paper work this way than by the traditional manager-private secretary system that exists throughout the Air Force today [36:15].

The Air Force has recently begun to install Word Processing Centers (WPCs) as a response to pressure for more efficient and effective resource utilization. All major commands are developing WP based office systems to reduce the time, money, and effort required to process information (36:18). In January 1976, Headquarters Air Force Logistics Command (AFLC), Wright-Patterson Air Force Base, Ohio approved a plan to establish a WP system. Under AFLC's plan, the first WPC became operational in June 1976. Presently 16 WPCs exist in AFLC (39:v).

Statement of the Problem

The WP concept has been compared to the computer revolution on several dimensions. Proponents advocate its advantages--higher productivity, higher quality output, lower overhead costs for the organization, and increased career opportunities for WP personnel--over the traditional boss/secretary concept (21:2). Opponents counter with disadvantages--high equipment costs, depersonalization of the office environment, increased regimentation and controls, complex equipment that only highly trained personnel can operate, and work-flow scheduling problems (36:15-18).

Although the technology and hardware are presently available for installation of economically feasible WP systems, the anticipated administrative improvements resulting from implementation of WPCs in AFLC have not

fully materialized. Symptoms of this problem include personnel turnover rates within WPCs twice that of base-wide clerical personnel and expected productivity levels that have not been achieved.

Word Processing Concept

A precise standard definition for WP has not been agreed upon in the literature. Kleinschrod offers one definition that describes the concept:

Word processing is an automated system designed to cut the cost and time of some familiar office routines--specifically, the originate/dictate, type/check/retype, sign/mail/distribute cycle of business documents [21:1].

The key words in this definition are "automated system"--the former typing pool did not utilize technological improvements in equipment to gain productivity. Rather, the typing pool was primarily an application of functional specialization to increase output of a written product. Productivity was almost entirely contingent upon the typist's speed and accuracy.

The United States Air Force has begun to establish WP under the Administrative Center Concept (36:15). Administrative Centers consolidate all administrative functions and responsibilities under a single supervisor. These functions are subdivided into two parts: Administrative Support Clusters and Word Processing Centers (38:2). Within Administrative Support Clusters, personnel perform

clerical activities that include filing, distribution, message receiving, and publications maintenance (38:3-6). Administrative Support Cluster will not be included as a part of this research effort.

Within a WPC, typing functions are accomplished by keyboard specialists using automated typewriters. Inputs to the WPCs are normally made with dictation devices that access a centralized recording system. A small percentage of inputs are handwritten drafts. From the inputs, the keyboard specialist types a draft or final copy of the document which is returned to the originator for revision or correction. The draft is then returned to the WPC for final typing (38:3-6).

The WPC serves the typing needs of a department or work group to which it is assigned. Each center has a supervisor who is responsible for work performance, work flow, workload evaluation, job scheduling, personnel matters, and determining priorities (39:2-A-1).

WPCs were implemented at Headquarters, AFLC in accordance with AFLC Programming Plan 75-35. This plan established the policy, approach, schedule of essential actions, and milestones used to establish WPCs throughout the Headquarters. The objectives of the plan were to develop an office system that would: (1) allow the cost effective utilization of technologically advanced office equipment to enhance the administrative and clerical system

productivity; (2) provide entry level office systems personnel training programs; (3) provide career progression for office systems personnel from entry to supervisory level; (4) standardize the position descriptions, grade levels, and organization structure; (5) provide a standard system for workload and productivity measurement and evaluation; and (6) allow professional administrative personnel to supervise administrative office systems (39:2-A-1).

One apparent misconception of WP is that it is a glorified typing pool. According to Anderson and Trotter, however, WP is more than another way of typing with a machine:

As a fully realized concept, word processing involves a profound re-examination of the entire chain of events from basic word origination to production of the finished document. Hence, WP means not only automated typing, but also the use of the various media for capturing dictation; the interaction of these media with the typing, revising, editing, and composition of successive drafts; and the final dissemination of the kinds and amounts of copies [1:10].

Major resistance to implementation of WP concepts in organizations has occurred. The resistance originates from both executive and secretarial staffs. This is a seeming paradox since the documented productivity increases and cost savings should have great pragmatic appeal to the executive, and the improved career progression possibilities for the secretarial staff should result in grass roots support at the worker level. Since technological and economic barriers to implementation are not apparent,

examination of the human aspects of WP conversion may be a rich topic for investigation.

Human Aspects

Kleinschrod calls WP ". . . a new social order for the office [21:4]." Anderson and Trotter also highlight the behavioral implications of WP by stating:

WP fundamentally alters the internal structure of office work. It renders the social office obsolete by making possible (and desirable) a complete change in the ways in which work is divided within a company's white collar sphere [1:10].

The restructuring of the traditional executive/secretary relationships has potential ramifications into most dimensions of administrative office organizational behavior.

The extant body of literature dealing with the technology, the hardware, and the potential economic benefits of WP is of considerable magnitude. However, the reported research on the behavioral aspects of WP is practically nil. A general problem facing managers, then, is that the lack of empirical behavior knowledge in this new organizational setting precludes effective coping with personnel resistance to WP conversion. The extent of the problem was summarized by John Lobinski, national sales manager for Xerox Corporation:

The office of the future will be an evolutionary, not a revolutionary process because it's simply a case of taking existing technologies, tying them together, making them operate at a cost-effective level and getting people to accept the concept--which might be the largest problem of all [2:188].

Some serious human relations problems have been encountered in WPCs. Employees have felt as if they were in a "modernized secretarial pool" where they were denied the personal relationships, responsibility and recognition they enjoyed in previous positions. Those employees who had held secretarial positions previously felt a strong need for personal satisfaction as well as tangible benefits. Working policies were also high on the list of areas of dissatisfaction. Unreasonable deadlines, pressure to produce more and more work in less and less time, boredom, repetitious work, and lack of responsibility were often-cited complaints (7:9-1). Resistance to change, misconceptions about the centers, loss of identity, and loss of status symbols have all been encountered in the change-over to WP. Dr. Bruce H. Medd, director of professional services of a large pharmaceutical firm, said:

Anyone who decided that word processing offers more potential than the methods in use must be prepared for an initial negative response from all staff levels because most people normally resist change. Therefore it must be introduced very positively and, unfortunately, dictatorially [42:84].

Motivation is one management tool that is often employed to deal with personnel problems. A considerable amount of research supports the view that for most jobs highly motivated workers perform at significantly higher rates than do unmotivated workers (29:67). One task of the WP supervisor is to create and develop the organizational

conditions which will enhance worker motivation. One of these conditions is thought to be job satisfaction (31:46).

Job Satisfaction

Many theories have been developed concerning organizational behavior. Although these theories are based on differing philosophies, their primary concern is usually directed toward the individual or his environment with respect to factors which influence the individual's behavior (4:341).

The "scientific management" theory developed by Frederick W. Taylor (24:1298) in the early 1900s was one of the initial studies to determine what motivated man to work. Taylor assumed that a worker who accepted the scientific management philosophy and who received the highest possible earnings with the least amount of fatigue would be satisfied and productive (24:1298). Studies have shown that working conditions patterned after "scientific management" principles lead to job dissatisfaction, reduced longevity, high turnover and absenteeism, resistance to change, low product quality, and labor/management problems (24:1298).

The introduction of the "human relations" school came in the 1930s (24:1298). This theory emphasized that man's primary concern in work is not purely economical and introduced noneconomical factors such as good

employee-management relations, organizational structure, cohesive work groups, the necessity of good supervision, and the importance of job satisfaction.

Two Conceptual Approaches

The two most popular human relations philosophies currently being used are Maslow's "Hierarchy of Need" theory and Herzberg's "Motivator-Hygiene" theory (24:1307).

Psychologist Abraham H. Maslow described man as a wanting animal that rarely reaches a state of complete satisfaction except for a short time. As one desire is satisfied, another surfaces to take its place. When this desire is satisfied, still another comes into the foreground. Maslow developed a hierarchy of needs (Figure 1) to portray his philosophy of human wants and needs. The theory contends that the needs are arranged in order of their prepotency. If an individual's needs are unsatisfied, he will endeavor to satisfy his most dominant needs first. When these needs are fulfilled the next will become operative (25:Ch.19).

Physiological needs refer to those essential to man's basic survival, such as food, water, air, and shelter. It is assumed these are the most dominant needs as they are critical to human existence (11:220).

Safety needs provide protection from danger, physical harm, threat, and insecurity. Recent theorists in

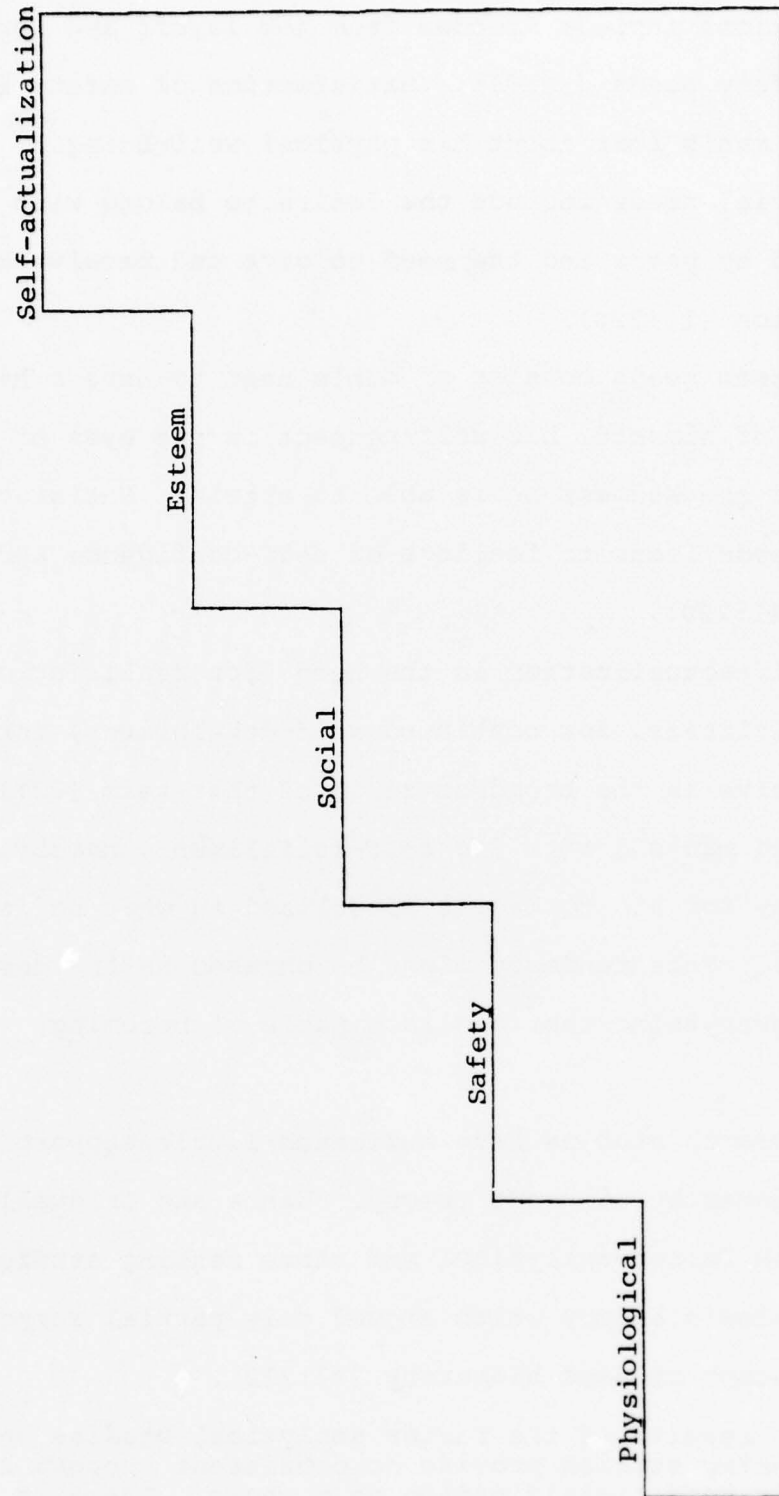


Figure 1
Maslow's Hierarchy of Needs (17:64)

human relations include freedom from job layoff and income loss as safety needs (17:65). Satisfaction of safety needs eliminates man's fear about his physical well-being.

Social needs include the desire to belong with and be accepted by peers and the need to give and receive love and affection (11:220).

Esteem needs consist of man's need to have a high evaluation of himself, his self-respect in the eyes of others, and the success he is able to attain. Satisfaction of these needs leads to feelings of self-confidence and prestige (11:220).

Self-actualization is the need "for realizing one's own potentialities, for continued self-development, for being creative in the broadest sense of that term [23:120]." It refers to man's desire for self-fulfillment, namely, the tendency for him to become actualized in what he is potentially. This tendency might be phrased as the desire to become everything that one is capable of becoming (25:124).

Research studies have indicated little support for Maslow's hierarchy of needs theory. Wahba and Bridwell reviewed ten factor-analytical and three ranking studies testing Maslow's theory which showed only partial support for the concept of need hierarchy (41:212).

The results of the factor analytical studies and the ranking studies provide no consistent support for Maslow's need classification as a whole. There is no

clear evidence that human needs are classified in five distinct categories, or that these categories are structured in a special hierarchy. There is some evidence for the existence of possibly two types of needs, deficiency and growth needs, although this categorization is not always operative. Self-actualization needs emerge sometimes as an independent category [41:224].

Recent studies indicate that a dual-level hierarchy of need concept may provide a viable alternative to Maslow's multilevel need hierarchy (41:233). Maslow himself seems to have leaned toward the dual-need notion in his later writings by proposing deficiency/growth need categorization (41:236).

Frederick Herzberg, an American psychologist, pioneered study in dual-factor motivation concepts with the development of the Motivator-Hygiene (M-H) theory. The two basic and fundamental propositions of Herzberg's M-H theory are:

1. The factors producing job satisfaction are separate and distinct from those that lead to job dissatisfaction.
2. (a) The factors that lead to job satisfaction (the motivators) are achievement, recognition, work itself, responsibility, and advancement. (b) The dissatisfiers (Hygiene factors) such as company policy and administration, supervision, interpersonal relations, working conditions, and salary contribute very little to job satisfaction [20:275].

The motivators describe man's relationship to what he does--his type of work. Motivator factors indicate they are necessary for improvement in performance beyond that pseudo-improvement which in substance amounts to coming up to a "fair day's work" (15:37-38). Satisfying factors tend to make people happy with their jobs. They serve man's

basic needs for self-improvement and increased competence (24:1312).

Hygiene factors describe man's relationship to the environment in which he does his job. Hygiene factors were so named because they serve primarily as preventatives (that is, to prevent job dissatisfaction) and because they also deal with the environment (15:37). Hygiene factors affect job dissatisfaction and meet man's needs to avoid unpleasantness. Figure 2 illustrates Herzberg's Motivator-Hygiene model.

Research conducted by Scott Myers (27:73), Manager of Personnel Research for Texas Instruments, supported the accuracy of Herzberg's findings. Myers found that the variables affecting motivation may have quite different effects on productivity. Factors having a decided effect on increased productivity (growth factors) challenge and stimulate employees to work effectively. Factors that reduce productivity are hygiene factors (24:1312).

A major critic of Herzberg's M-H theory is Victor Vroom, an organizational psychologist at the Carnegie-Mellon School of Industrial Administration. He observed that Herzberg's results might be a result of the defense mechanism of individuals. To avoid any threat to their self-image, individuals take credit for satisfying results and blame others for dissatisfying results (40:12).

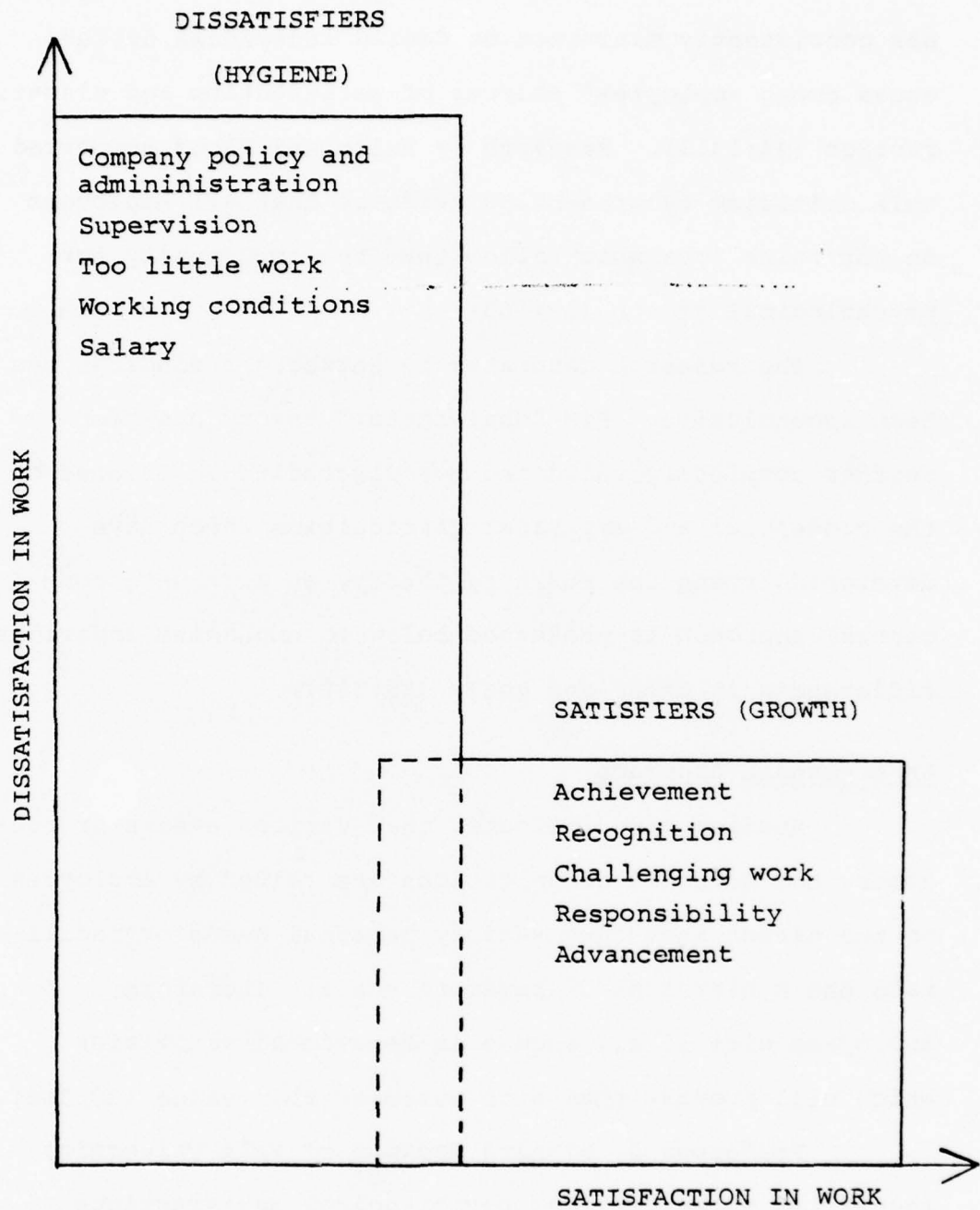


Figure 2
Herzberg's Motivator-Hygiene Model (17:69)

Another criticism of Herzberg's theory is that he has consistently minimized or denied individual differences among employees' sources of satisfaction and dissatisfaction (24:1313). Research by Hulin and Blood supported this criticism by presenting evidence that all employees do not value jobs which allow them the opportunity for psychological growth (19:105).

The research generated by Herzberg's findings has been inconclusive. His "dual-factor" theory has been neither completely validated nor discredited. Because of the conceptual and empirical difficulties which have developed around the Herzberg theory, an alternate conceptual approach is presented below to emphasize individual differences in needs and goals (33:300).

An Alternate Approach

Studies have indicated that various events or outcomes that occur in organizations are valued by employees to the extent that they satisfy personal needs or facilitate the achievement of personal goals. Therefore, employees will likely engage in behavioral activities which will provide them with outcomes they value (33:300).

Professor J. Richard Hackman of Yale University identified three critical psychological satisfactions (Figure 3) which should be obtained when an employee works effectively on a job. They are: (1) provisions for feedback

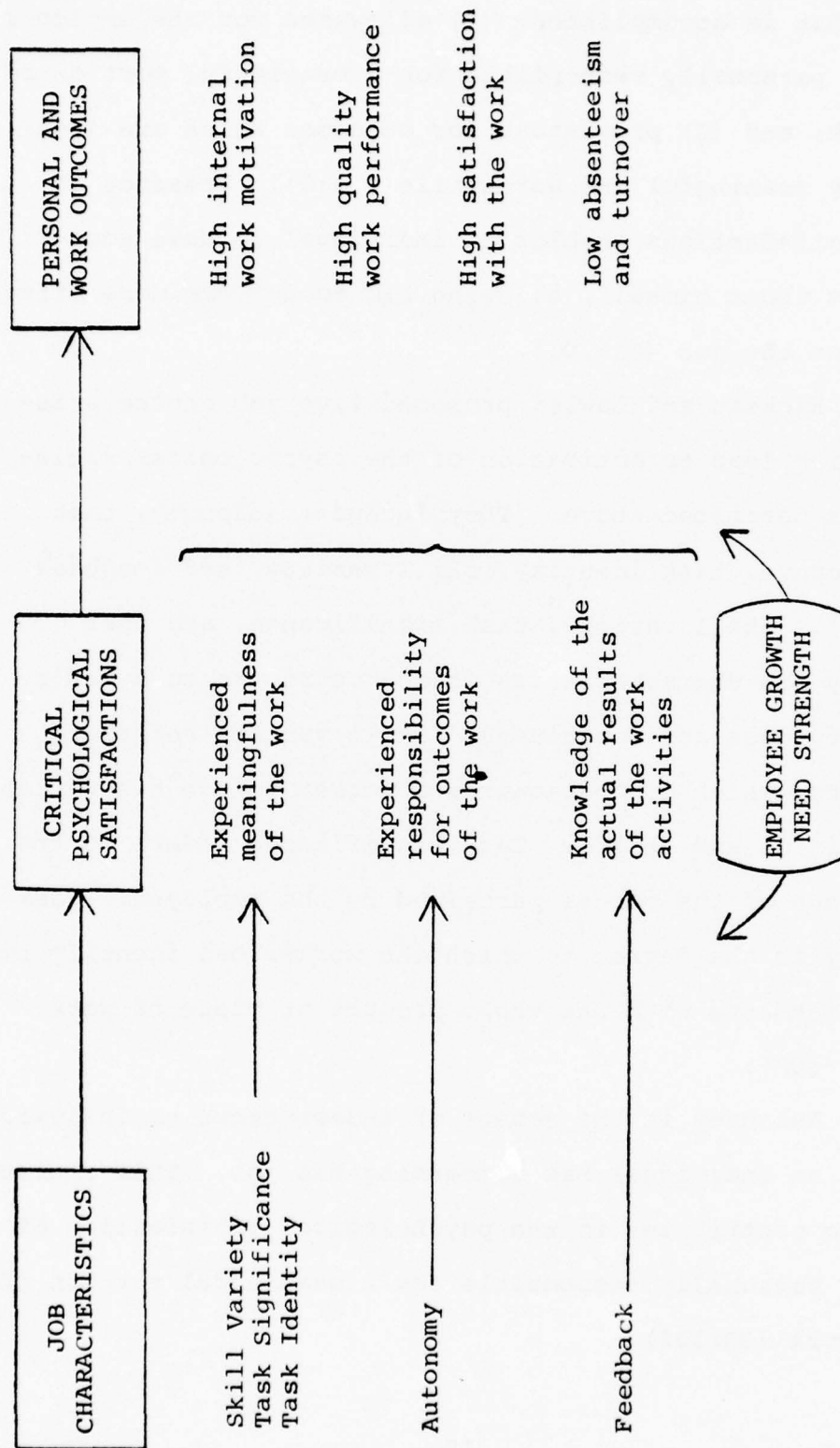


Figure 3

The Relationships Among the Job Characteristics, the Critical Psychological Satisfaction, and Personal Work Outcomes (14:3)

about what is accomplished; (2) allowance for the employee to feel personally responsible for a meaningful portion of the work; and (3) provisions for outcomes which are individually meaningful and worthwhile (14:2). Presence of these satisfactions enables an individual to have good feelings about himself, allowing him to perform more effectively on the job (33:301).

Hackman and Lawler proposed five job characteristics which lead to activation of the psychological satisfactions described above. They include: autonomy, task significance, task identity, skill variety, and feedback (19:106). Skill variety, task significance, and task identity are characteristics which contribute to a job's meaningfulness and worthiness. Skill variety refers to the degree which a job requires a worker to use his variety of abilities and skills. Task significance refers to the importance of the job as perceived by the employee. Task identity is the degree to which the worker can identify his accomplishments with the whole product or piece of work (33:302-303).

Autonomy is the amount of independence or individual freedom an individual has concerning his job. This characteristic contributes to the psychological satisfaction of feeling personally responsible for a meaningful portion of one's work (33:302).

The fifth characteristic, feedback, is the information a worker receives concerning the effectiveness of his performance. Feedback contributes to the psychological situation of knowing what is accomplished on the job (33: 303).

The behavioral outcomes evinced by WPC personnel (high turnover and low productivity) are indications that the job characteristics, which Hackman deemed necessary for employee satisfaction, are not present in WPCs. Based on these indications, the researchers have selected the Hoppock Job Satisfaction Survey to measure the general level of WPC personnel job satisfaction and The Job Descriptive Index to measure more specific determinants of job satisfaction.

Delimitations

This research effort was directed toward an analysis of the job satisfaction levels of personnel within WPCs, and the effects of job satisfaction on potential turnover and individual productivity.

Scope

This research includes an analysis of WPC job satisfaction levels and how they relate to personnel turnover rates and individual productivity. The WPCs at a Major Command Headquarters in the Central United States were surveyed to provide data for this research.

Objective

The objective of this research was to determine the relationship of job satisfaction to other behavioral outcomes of personnel assigned to WPCs.

Research Question

What is the relationship between job satisfaction of WPC personnel and the behavioral outcomes of their employment in WPCs?

CHAPTER II

RESEARCH DESIGN AND METHODOLOGY

Introduction

This research was designed to investigate the concept of job satisfaction and its relationship to certain selected behavioral outcomes of WPC personnel at a Major Command Headquarters in the Central United States.

This chapter (1) describes the general characteristics of the population and sample, (2) discusses the instruments to be used in the collection of the data, (3) reviews procedures for the collection of the data, and (4) examines the nature of the statistical design for analyzing the data.

Population and Sample

Fox described five states of the sampling process: (1) the universe, (2) the population, (3) the invited sample, (4) the accepting sample, and (5) the data-producing sample (10:319-351). All personnel assigned to the WPCs were considered the population. All personnel were female and had a Civil Service rating of GS-4, GS-5, or GS-6 (8). Other demographic factors, such as age, time in service, or race, were not considered pertinent in the

research. The research population may be representative of the universal population of WPCs throughout the Air Force.

The invited sample consisted of a census of the 104 WPC personnel employees at the Command Headquarters. A census of the population was considered appropriate given the relatively small number of personnel involved and the accessibility of the population to the research team. The accepting sample was those WPC personnel who agreed to participate in the project by completing the questionnaire. Finally, the data-producing sample consisted of those participants whose questionnaires were properly completed. The researchers validated each survey for acceptance or rejection.

The sample selection procedure is illustrated in Table 1.

Variable Definition and Measurement

The variables of concern in this research are described below by presenting a definition and means of operationalizing each variable. The measuring instruments are found in the appendices.

Two dependent variables were considered in this research effort: potential turnover and individual productivity. The independent variable was satisfaction.

TABLE 1
SAMPLE SELECTION PROCEDURE

UNIVERSE

All Personnel of Word Processing Centers

POPULATION

104 Word Processing Center Personnel
Major Command Headquarters in the Central United States

INVITED SAMPLE

104 Word Processing Center Personnel
Major Command Headquarters in the Central United States

ACCEPTING SAMPLE

65 Word Processing Center Personnel
Major Command Headquarters in the Central United States

DATA-PRODUCING SAMPLE

62 Word Processing Center Personnel
Major Command Headquarters in the Central United States

Turnover

Definition: Turnover is generally seen as a form of employee alienation or withdrawal from an organization. An individual's decision to terminate employment will usually depend upon the relative importance of a particular job to other factors in his life, or his perception of alternative employment opportunities which are superior to his current job (16:293-294).

Turnover is usually measured after it has occurred; that is, after the individual has terminated his employment with the organization. Civil Service usually expresses actual turnover as a percentage figure of those individuals who have been separated compared to the total number of civilian positions available within a particular organization. Personnel letters of resignation, requests for lateral transfer, or retirement notifications are used in the derivation of potential turnover (8). The researchers adhibited potential turnover in lieu of actual turnover. Thus, turnover in this study was defined as the individual's expressed probability of terminating his employment or requesting a lateral transfer.

Measurement: Since actual turnover can be measured only after it occurs, a surrogate measure of potential turnover probability was administered simultaneously with the other instruments. This was a single item measure with Likert scale responses to operationalize this dependent

variable. The validity of this question as an acceptable data gathering instrument is supported by Kraut (22:233-243).

Productivity

Definition: Productivity is generally equated to the total output of a commodity or service (12:79). In WPCs, productivity is not always measured by a single component. However, for this research, to simplify the data collection process, a single component (lines per day) was chosen as the productivity measure.

Measurement: Daily reports of individual productivity were recorded by each WPC supervisor. The researchers used these data to measure individual productivity. It was assumed that each supervisor's method of tabulating daily employee line output was accurate, thereby validating this data collection procedure.

Satisfaction

Definition: This variable was defined as the difference between what is expected and what is experienced in relation to the alternatives available in a given situation (35:6).

Measurement: The instruments used for measuring this variable were the Job Satisfaction questionnaire developed by R. Hoppock in 1935 and the Job Descriptive

Index (JDI) developed by Patricia C. Smith, Lorne M. Kendall, and Charles L. Hulin in 1965.

The Hoppock Job Satisfaction survey was developed to measure individual general job satisfaction levels. Validation data for the questionnaire indicates attitudinal differences between satisfied and dissatisfied personnel, but appears to bear only peripherally on validity as it is considered today (34:132). Nonetheless, the Hoppock Job Satisfaction survey remains very popular for use among present-day researchers.

Table 2 shows statistical results from administering Hoppock's Job Satisfaction survey to over 28,000 subjects. Sample 1 in the table was comprised of managers (ranging from foreman to senior executives) in a large public utility company. Respondents in Sample 2 were Department of Defense Civil Service employees in all grades and a wide variety of occupational specialties. Sample 3 was military personnel in all grades through colonel and in a variety of occupational categories (26:3-4).

TABLE 2
STATISTICAL DESCRIPTORS OF THREE SAMPLES USING
HOPPOCK'S JOB SATISFACTION MEASURE (26:11)

Sample	N	Mean	Mode	Std. Dev.	Range
1	360	21.25	22	2.73	10-27
2	17,110	19.31	20	4.07	4-28
3	10,996	17.69	20	4.98	4.28

The mean score of Civil Service employee data provided the basis for determining the general level of job satisfaction obtained from administering the Hoppock Job Satisfaction survey to WPC personnel. Although the Hoppock Job Satisfaction survey is a widely used instrument, it does not identify specific aspects of job satisfaction. For this purpose, the researchers selected the JDI.

The JDI measures specific areas of job satisfaction. Smith, et al., indicate that job satisfaction is a multi-dimensional concept covering five areas of a job: the work itself, the supervision, the co-workers, the pay, and the opportunities for promotion. For each area there is a list of adjectives or short phrases, and the respondent is instructed to indicate whether each word or phrase applies with respect to the particular facet of his job being questioned (35:69).

Nicholas Imparato compared the JDI to the Porter Need Satisfaction Questionnaire developed by Lyman W. Porter and Edward E. Lawler. Both tests reflect similar views of what constitutes job satisfaction. Imparato found the two were moderately correlated (18:397-404).

Smith, Kendall and Hulin found the results of the JDI to hold up across quite different groups of subjects and a considerable range of methods of measuring satisfaction. Based on their testing, the JDI has been used in subsequent studies as the soundest and most valid

measure of satisfaction, in the sense that it is most representative of what is common to a number of methods of measuring satisfaction. The concepts and method of measurement are considered appropriate to form a basis for an analysis of the variates underlying satisfaction with each of several aspects of the job situation (35:67-68).

Collection of Data

Fox stated five basic ethical standards to be observed in any research effort:

- (1) The participant is told the purpose of the research and how his participation and the data he provides will be used.
- (2) The use of instruments and the experimental procedures should be provided as early as possible in the research.
- (3) Participation in the research should not have any unpleasant effects on the participant.
- (4) The confidence of the data provided by participants should be respected.
- (5) The research should not place the participant in a situation requiring unprofessional behavior [10:384-389].

With the above standards as guidelines throughout this study, the following procedures for collection of data were implemented.

An advance letter of explanation (Appendix A) was sent to the director of the WPCs and the WPC supervisors soliciting cooperation and support for the administration of the survey. Questionnaire booklets

containing demographic questions (Appendix C), the Hoppock Job Satisfaction survey (Appendix D), the Job Descriptive Index (Appendix E), and the turnover probability question (Appendix F), were distributed to all members of the invited sample. Detailed instructions (Appendix B) and a copy of the Privacy Act (Appendix G) accompanied all booklets. When completed, each survey was placed in a pre-addressed envelope and returned to the researchers.

Editing the raw data for detection of errors or omissions, and correcting these when possible, was the first step in data analysis. Parten points out that the editor is responsible for seeing that the data are:

(1) as accurate as possible, (2) consistent with other facts secured, (3) uniformly entered, (4) as complete as possible, (5) acceptable for tabulation, and (6) arranged to facilitate coding and tabulation (30:425).

The responses of acceptable JDIs were compared to the normative version of the survey developed by Smith, Kendall and Hulin (Appendix H). Numerical values were assigned to each answer in accordance with the weighted criteria shown in Table 3. These numerical values were arranged in matrix form as raw coded data for entrance into the computer for factor analysis.

TABLE 3
SCORING OF JDI ITEMS (35:79)

Response	Score
Yes to a positive item	3
No to a negative item	3
? to any item	1
Yes to a negative item	0
No to a positive item	0

Data Analysis

Analysis of the data collected from the WPC respondents was used to determine the answer to the research question.

Three major steps in the data analysis were necessary. First, the results of the Hoppock Job Satisfaction Survey were analyzed to determine the general level of job satisfaction among WPC personnel. Next, the dimensions or factors of the JDI required evaluation for construct validity and reliability. The third step was the determination of the relationships between the identified dimensions and the dependent behavior variable.

Scores obtained from Hoppock's Job Satisfaction Survey were averaged and compared to the mean score obtained by Department of Defense Civil Service employees. This mean is shown in Table 2. A lower than normal cumulative mean indicated that general job dissatisfaction was

present in the WPCs. Results indicating worker satisfaction represented a general level of job satisfaction; however, this instrument does not measure specific areas of a job as does the JDI.

The technique of factor analysis was used in the second step to identify the dimensions of the JDI. Subprogram FACTOR from the Statistical Package for the Social Sciences (SPSS) was employed (28:468-514). The method of factoring selected for use with subprogram FACTOR was PA2, principal factoring with iteration. This method automatically replaces the main diagonal elements of the correlation matrix with communality estimates. The initial estimates of the communalities are given by the squared multiple correlation between a given variable and the rest of the variables in the matrix. This is the most universally accepted factoring method (28:480). Each factor of the JDI was correlated with the dependent behavioral variables to determine their relationships. The scales of the JDI have been shown to have high reliability with discriminant and convergent validity (35:58).

In the third data analysis step, the relationships were tested using Pearson Product-Moment correlations. The analysis of the correlations between each of the categories of variables provided evidence of the similarity/dissimilarity of the perceptual measure of job satisfaction.

Figure 4 shows a tabular format of the Pearson Product-Moment correlations that were computed.

<u>Motivational Variables</u>	<u>SATISFACTION VARIABLES (JDI)</u>				
	<u>Work</u>	<u>Pay</u>	<u>Super- vision</u>	<u>Promo- tion</u>	<u>Co- workers</u>
Turnover	X	X	X	X	X
Productivity	X	X	X	X	X

Figure 4

Required Pearson Product-Moment Correlations

Assumptions

1. It was assumed the survey question developed by the researchers rendered an accurate measure of potential turnover.

2. It was assumed that WPCs represented at the Major Command Headquarters in the Central United States are representative of Air Force-wide WPCs.

Limitations

Conclusions rendered are applicable to the studied population; however, the results can be generalized to Air Force-wide WPCs.

CHAPTER III

FINDINGS AND STATISTICAL ANALYSIS

This chapter contains the findings and statistical analyses of the data collected in this research effort. A complete presentation of the data is made, the statistical analyses are fully described, and the results of the analyses are reported.

Presentation of Data

One hundred four Word Processing Center employees assigned to a Major Command Headquarters in the Central United States were asked to participate in this research project by completing the Organizational Assessment Questionnaire. The results of this request are summarized in Table 4.

TABLE 4

RESPONSE TO THE ORGANIZATIONAL ASSESSMENT QUESTIONNAIRE

Sample	Invited Sample	Accepting Sample	Usable Returns	Usable returns as % of Invited Sample
Word Processing Center Personnel	104	65	62*	62.5*

*43 of the usable returns provided productivity information.

The questionnaires were reviewed for proper completion, scores tabulated, and data entered into the computer. The first five questions of the survey pertained to demographic data and provided the following information:

Question 1: One hundred percent of the respondents were women.

Question 2: Ninety-seven percent of the respondents were high school graduates or had received some college or technical training.

Question 3: Forty-eight percent of the respondents had been federal civilian employees from one to ten years and thirty-four percent from ten to twenty years. The remaining eighteen percent had been employed by the federal government less than one year or more than twenty years.

Question 4: Seventeen percent of the respondents were 21 years of age or younger, twenty-eight percent were 22 to 30 years old, forty percent were 31 to 50 years old, and thirteen percent were over 50 years of age.

Question 5: Eighty-four percent of the respondents had been at their present job for 11 months or less and the remaining sixteen percent had held the same position for more than one year.

Question 6 measured the probability of turnover among the WPC employees. Twenty-three percent of the respondents indicated they wanted to leave or were considering leaving their job, twenty-six percent were undecided, and fifty-two percent were planning to stay in their present job.

Questions 7 through 10 incorporated the Hoppock Job Satisfaction portion of the survey.

Question 7: Thirty-five percent of the respondents indicated they felt satisfied with their jobs half of the time or less while sixty-five percent were satisfied more than half of the time.

Question 8: Fifteen percent of the respondents showed a dislike for their job, eighteen percent were indifferent to the job, and sixty-eight percent liked their job.

Question 9: Thirty-seven percent of the respondents would prefer to change their job and sixty-three percent were not eager or preferred to stay with their present job.

Question 10: Thirteen percent of the respondents felt they disliked their job more than most people, forty-eight percent felt they liked their job about as well as most people, and thirty-nine percent felt they liked their job better than most people.

Appendix I depicts the responses to questions 2 through 10 and the JDI questions in the form of histograms.

The initial task was to test the *a priori* assumption that the mean score attained by the WPC personnel on the Hoppock Job Satisfaction survey would be lower than the mean indicated by Sample 2 (civil service) respondents in Table 2. A supported assumption would indicate a lower level of job satisfaction among WPC personnel. Table 5 compares the Hoppock Job Satisfaction survey results of WPC personnel with the DOD Civil Service results extracted from Table 2.

TABLE 5

HOPPOCK JOB SATISFACTION INFORMATION--DOD CIVIL
SERVICE EMPLOYEES VERSUS WPC EMPLOYEES

Organization	Sample Size	Mean	Standard Deviation
DOD Civil Service	17,110	19.31	4.07
WPCs	62	18.39	4.12

A one-tail t-test was used to determine if the mean score of 18.39 attained by the WPC personnel was significantly lower than the 19.31 DOD Civil Service employee mean score. The t-test formulas used in the analysis of the data were:

Mean:

(5:25)

$$\bar{X} = \frac{\sum_{i=1}^N X_i}{N}$$

Variance:

(5:246)

$$s^2 = \frac{\sum_{i=1}^N (X_i - \bar{X})^2}{N-1}$$

Standard Error of the Difference:

(5:353)

$$s_{\bar{X}_1 - \bar{X}_2} = \sqrt{\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}} \sqrt{\frac{n_1 + n_2}{n_1 n_2}}$$

t-test ratio:

(5:353)

$$t = \frac{\bar{X}_1 - \bar{X}_2}{s_{\bar{X}_1 - \bar{X}_2}}$$

A one-tail test at a .05 level of significance required a value of 1.65 for significance. The test results were as follows:

$$H_0: \mu = 19.31$$

$$H_a: \mu < 19.31$$

$$X_1 = 18.39$$

$$X_2 = 19.31$$

$$s_1^2 = 16.95$$

$$s_2^2 = 16.56$$

$$n_1 = 62$$

$$n_2 = 17,110$$

$$s_{x_1} - s_{x_2} = .517$$

$$t = -1.78$$

$$-1.78 < -1.65$$

Therefore, H_0 was rejected. The general level of job satisfaction of the WPC personnel was lower than the job satisfaction level of DOD Civil Service personnel shown in Table 5.

Validation of the Job Descriptive Index was accomplished by factor analysis. Table 6 shows the results of this procedure. The factor analysis was used to determine if the five areas of the JDI showed discriminant and

TABLE 6
PARTIAL FACTOR MATRIX

SUPERVISOR		COWORKERS		PROMOTION		WORK		PAY	
Factor 1		Factor 2		Factor 3		Factor 4		Factor 5	
Ques.	Load	Ques.	Load	Ques.	Load	Ques.	Load	Ques.	Load
19	.47	37	.52	64	.90	1	.53	55	.64
20	.72	38	.31	65	.83	2	.47	56	.43
21	.72	39	.50	66	.68	3	.60	57	.64
22	.59	40	.68	67	.65	4	.72	58	.37
23	.73	41	.35	68	.91	5	.47	59	.69
24	.60	42	.52	69	.37	6	.67	60	.71
25	.63	43	.72	70	.69	7	.39	61	.62
26	.33	44	.65	71	.89	8	.26*	62	.38
27	.66	45	.40	72	.74	9	.46	63	.64
28	.54	46	.29*			10	.31		
29	.60	47	.77			11	.66		
30	.59	48	.52			12	.36		
31	.32	49	.55			13	.49		
32	.65	50	.03*			14	.03*		
33	.68	51	.58			15	.54		
34	.03*	52	.60			16	.17*		
35	.29*	53	.74			17	.33		
36	.62	54	.55			18	.66		

*Not significant.

convergent validity for the survey sample. A factor loading of 0.3 or greater was used as the determinant of loading significance (13:500).

Factors one through five were identified as factors relating to supervision, co-workers, promotion, work, and pay. These factors accounted for 33, 22, 21, 13, and 11 percent of the common variance respectively. They also comprised 45 percent of the total variance.

Sixteen of the 18 items intended to measure level of satisfaction with supervision loaded on Factor 1. Items 34 (Leaves me on my own) and 35 (Lazy) did not load on Factor 1. Item 34 did not show convergence on any factor. Items 26 (Doesn't supervise enough) and 31 (Knows job well) were nondiscriminant as they also loaded on Factor 4.

Seventeen of the 18 items intended to measure the level of satisfaction with co-workers loaded on Factor 2. Item 50 (No privacy) did not show convergence on any factor. Items 52 (Narrow interests) and 54 (Hard to meet) were nondiscriminant as they also loaded on Factor 3 and Factor 1 respectively.

All nine of the items intended to measure level of satisfaction with promotion loaded on Factor 3.

Fifteen of the 18 items intended to measure level of satisfaction with work loaded on Factor 4. Item 1 (Fascinating) was nondiscriminant as it also loaded on

Factor 2. Item 8 (Hot) loaded significantly on Factor 5. Item 9 (Pleasant) was nondiscriminant as it also loaded on Factors 1 and 2. Item 10 (Useful) was nondiscriminant as it also loaded on Factor 2. Items 12 (Healthful) and 13 (Challenging) were nondiscriminant as they also loaded on Factors 3 and 5 respectively. Item 16 (Simple) did not converge on any factor.

Each of the 9 items intended to measure level of satisfaction with pay loaded on Factor 5. Item 56 (Satisfactory retirement plan) and 57 (Barely live on income) were nondiscriminant as they also loaded on Factor 2. Item 62 (Highly paid) was nondiscriminant as it also loaded on Factor 4.

The overall grouping of the questions was consistent with results of a similar analysis by Smith, et al. (35:90). Appendix J shows the complete related factor matrix.

The split-half technique was used to test the reliability, in an equivalence sense, of the items that loaded on the five factors. The results of the test indicated high equivalent reliability of the items for each of the five factors (Table 7).

Smith, et al. developed tables showing the percentile norms of the five scales of the JDI. These tables are for use only with an individual worker's scores on the JDI. They caution that use of the tables "for purposes of estimating the percentile standing of a Mean score for a

TABLE 7
EQUIVALENT RELIABILITY

Factor	Questions	Uncorrected	Spearman-Brown
1	19-36	.85	.92
2	37-54	.77	.87
3	64-72	.82	.90
4	1-18	.78	.88
5	55-63	.74	.85

Spearman-Brown prophecy formula (9:125):

$$SB/rT = 2rH/1+rH$$

group of workers would result in serious errors of interpretation [35:93]." For this reason no comparison of the sample mean scores with the percentile norms was made.

Each of the mean scores for the five scales of the JDI was tested for significance with the normative statistics obtained by Smith, et al. (Table 8). Norms for the five JDI scores are based on a sample of female employees across a total of 21 plants, representing 19 different companies and 16 different standard Metropolitan Statistical Areas. This sample was considered by Smith, et al. as reasonably representative of the range of conditions found in American industry and business (35:88). Table 9 contains the statistics obtained from the survey of WPC employees.

TABLE 8
JDI SCALE STATISTICS FOR FEMALE EMPLOYEES
POOLED ACROSS 21 PLANTS

Scale	N	Mean	Standard Deviation
Work	638	35.74	9.88
Pay	635	27.90	13.65
Promotion	634	17.77	13.38
Supervision	636	41.13	10.05
Co-workers	636	42.09	10.51

TABLE 9
JDI SCALE STATISTICS FOR WPC EMPLOYEES

Scale	N	Mean	Standard Deviation
Work	61	27.30	12.26
Pay	62	28.53	10.55
Promotion	62	8.29	10.99
Supervision	60	44.47	13.83
Co-workers	61	40.15	11.84

Each of the five JDI scales was tested for significance using a two-tail t-test ratio utilizing the equations shown on page 36. Each scale was tested at a .05 significance level. The individual tests and results are as shown in Table 10.

TABLE 10
SIGNIFICANT DIFFERENCE BETWEEN MEANS--
TWO-TAILED LEVEL OF SIGNIFICANCE

Scale	Mean	Standard Error of Difference	t-ratio	Required for 5% Sig.	Decision
Work	27.30	1.36	-6.22	-1.96	Sig.
Supervision	44.47	1.37	2.37	1.96	Sig.
Co-worker	40.15	1.42	-1.37	-1.96	N.S.
Pay	28.53	1.82	.36	1.96	N.S.
Promotion	8.29	1.77	-5.37	-1.96	Sig.

The results of this test indicated that satisfaction with Work and Promotion among WPC personnel was below the normative values while satisfaction with Supervision was above the normative mean. Co-workers and Pay satisfaction were not significantly different from that indicated by the normative scale.

Each factor of the JDI was correlated with the dependent behavioral variables (turnover and productivity)

to determine their relationships. Pearson Product-Moment correlations were used to test the relationships.

Each correlation coefficient was tested for significance at a .05 confidence level using the following formula: (5:553)

$$t_s = r \sqrt{\frac{N-2}{1-r^2}}$$

The results of the test are shown in Table 11.

TABLE 11
CORRELATION COEFFICIENTS OF TURNOVER
AND PRODUCTIVITY WITH JDI SCALES

	n	Actual Coefficient	Required Coefficient	Decision
Turnover with:				
Work	61	.5761	.2100	Sig.
Supervision	60	.2424	.2118	Sig.
Co-Workers	61	.1606	.2100	N.S.
Pay	62	.1458	.2084	N.S.
Promotion	62	.2205	.2084	Sig.
Productivity with:				
Work	42	.1334	.2525	N.S.
Supervision	42	.1362	.2525	N.S.
Co-Workers	42	-.0413	.2525	N.S.
Pay	43	.0562	.2496	N.S.
Promotion	43	-.2005	.2496	N.S.

To correlate productivity with the JDI factors, it was necessary to standardize the productivity values. Each value was standardized with respect to the mean productivity for the center in which the respondent worked. The following formulas were utilized:

$$z = \frac{\bar{x}_i - \bar{x}_c}{S_x}$$

$$S_x = \frac{\sigma}{\sqrt{n}}$$

$$S = \sqrt{\frac{(x_i - x_c)^2}{n-1}} \quad (5:335)$$

The resultant "Z" scores were used in the computation of the Pearson Product-Moment Correlation coefficient.

As no significant correlation was obtained between Productivity and the JDI variables, Productivity data was further divided into those individuals above the mean and those below the mean line-production within their respective WPCs. Table 12 and Table 13 show the results of the Pearson Product-Moment correlations using above and below average productivity respectively.

TABLE 12

PEARSON PRODUCT-MOMENT CORRELATION
ABOVE AVERAGE PRODUCTIVITY

Productivity with	n	Actual Coefficient	Required Coefficient	Decision
Work	20	.4153	.3625	Sig.
Supervision	19	.1659	.3716	N.S.
Co-workers	20	-.0826	.3625	N.S.
Pay	20	-.2476	.3625	N.S.
Promotion	20	.0977	.3625	N.S.

TABLE 13

PEARSON PRODUCT-MOMENT CORRELATION
BELOW AVERAGE PRODUCTIVITY

Productivity with	n	Actual Coefficient	Required Coefficient	Decision
Work	22	.0778	.3462	N.S.
Supervision	23	-.0146	.3388	N.S.
Co-workers	22	-.1384	.3462	N.S.
Pay	23	.5081	.3388	Sig.
Promotion	23	.0046	.3388	N.S.

Fisher's Z transformation function

$$Z = [\log_e(1+r) - \log_e(1-r)] \quad (3:226)$$

was used to test for significance of the difference between the correlation coefficients of the above average and below average groups. From inspection, it was determined that only productivity with the Work satisfaction scale and Pay satisfaction scale required testing. The results of the test (Table 14) indicated a significant difference between the values of the correlation coefficient for Productivity with Pay. Productivity with Work was non-significant.

TABLE 14
DIFFERENCE TEST

Productivity With	Above Mean Coefficient	Below Mean Coefficient	Required Z	Actual Z	Decision
Work	.4153	.0778	1.96	1.32	N.S.
Pay	-.2476	.5081	1.96	2.48	Sig.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The researchers found that the WPCs in this sample were experiencing problems similar to those mentioned in the literature review. The following conclusions and discussions are provided to support the findings.

Conclusions

The mean score on the Hoppock Job Satisfaction Survey for the sample was significantly lower than the mean score of the normative group. The researchers concluded that this supports the *a priori* assumption that the general level of job satisfaction for the WPC employees was lower than the Department of Defense Civil Service employees used as the norm.

The JDI, which measures specific aspects of job satisfaction, was used to identify the specific areas of the job that were causing the lower than normal level of job satisfaction as measured by the Hoppock Job Satisfaction Survey. Analysis of the mean scores of satisfaction as measured by the JDI indicated that work and promotion were below the normal mean. The conclusion is that below normal scores in the work and promotion (motivating factors) scales

indicate that the general level of job satisfaction is lower among WPC employees because of dissatisfaction with the type of work and the promotion opportunities under the WP system. The mean score for the supervision scale was above normal, indicating employee satisfaction with their supervisors. The analysis for the mean scores attained in the areas of pay and co-workers (hygiene factors) were not significantly different from the normative scores; therefore, the researchers concluded that the WPC employees were not dissatisfied in these two areas.

Analysis indicated there was a moderate relationship between turnover and the work satisfaction scale. As the level of satisfaction with work increased, an employee was made likely to stay in the present job. This conclusion is supported in research conducted by Porter, et al. Employees will likely engage in behavioral activities which will provide them with outcomes they values (33:200).

A low relationship was indicated with turnover and the satisfaction scales of supervision and promotion. As the level of satisfaction with these scales increased, an employee was more likely to stay in the present job.

No relationship was found between turnover and the satisfaction scales of co-workers and pay.

No significant relationships were found between productivity and the five factors of the JDI scale. However, when the respondents were separated into above and below mean productivity groups, a relationship between high producers and work and low producers and pay was indicated. Further analysis indicated the relationship between high producers and work was not significantly different to support additional conclusions. The moderate relationship existing among low producers and the pay satisfaction scale indicated that low producers had more concern with pay.

To answer the research question, a moderate to low relationship between job satisfaction of WPC personnel and the behavioral variable turnover was found. No relationship existed between job satisfaction of WPC personnel and the behavioral variable productivity.

Discussion

The general level of job satisfaction, as measured by the Hoppock survey, may have been lower than normal because the Word Processing concept is remiss in providing those factors leading to job satisfaction as identified by Herzberg: achievement, recognition, work itself, responsibility, and advancement (20:275). The impetus for incorporating a cost effective system is such that the behavioral aspects are lightly considered or ignored. Implementation

of the WP system studied was accomplished rather quickly and restructuring of the secretarial tasks created dislike among some of the employees because these motivating factors were absent. Traditional secretarial tasks were replaced by what appeared to be production line work. As a result, loss of autonomy, lack of task significance and skill variety, reduced task identity, and less feedback have caused general dissatisfaction among WPC employees.

Herzberg stated that work and promotion opportunities are motivating factors and lead to job satisfaction if an individual is satisfied in these areas. The JDI results indicated that the WPC employees were not satisfied with work and promotion; therefore, two important motivators for job satisfaction were lacking. Restructuring the traditional secretarial tasks likely created negative attitudes regarding the WPCs. Employees were placed into situations where there was a fundamental change to the internal structure of office work. The traditional boss-secretary relationship was altered. Threatened loss of identity and the appearance of production type work created uneasiness among employees due to potential layoffs as a result of management decisions to rely more heavily on cost saving automated machines. Promotion potential was more uncertain due to restrictions placed on the career levels an employee can attain and the specialization required of WPC employees. How are the necessary skills to

progress gained if the job dictates specialization in one area (typing)? Management may need to increase the attention placed in the area of job design to reestablish meaningful relationships between keyboard specialist and originator. The keyboard specialist who has direct feedback from an originator is much more likely to be involved in her work and motivated to perform well than one who is just another cog in the word processing machinery. Employees might become more satisfied with the promotion system if a rotating system of unique and repetitious jobs were developed so that all operators were treated fairly and have a variety of work to accomplish (7:10-6).

Although the JDI indicated employee satisfaction with their supervisors, Herzberg states this is a hygiene factor and will contribute very little to job satisfaction (20:275).

Perhaps the relationship between work and turnover existed because of problems indicated in the Human Aspects section of Chapter I. For example, resistance to change, misconceptions about WPCs, loss of identity, and loss of status symbols. Overly specialized jobs leave much to be desired. They are dull, boring, and monotonous to many people. Rationality dictates that in such circumstances employees will be motivated to seek some type of relief from this type of activity. Task specialization employed in WPCs does not permit diversity of tasks and

in its strictest form can be expected to cause negative reactions such as increased turnover (32:36). The relationship of work satisfaction to turnover supports this view.

Organizational change is usually accompanied by emphasis on the logical, financial, and technological reasoning behind it. However, one of the most important aspects, the human side, is often lightly addressed or totally ignored. Perhaps the lack of attention to the human aspects had led to many of the problems encountered by the the WPCs surveyed. The results of the satisfaction surveys indicate that the concept of WP has not been accepted by the employees.

Recommendations

Research is characterized more by its tendency to raise new problems for further research than by its tendency to provide solutions for old problems. This study was no exception to the generalization. The following recommendations are made regarding further research in this area:

1. The possibility of defining an acceptable measure of productivity in WPCs.
2. Examination of job satisfaction among personnel in Administrative Support Clusters.
3. An in-depth study of the relationship of the user satisfaction with WPC employee satisfaction.

4. An analysis of the feedback procedures and their relationship to WPC personnel job satisfaction.

5. An examination of relationships between WPC employee demographic data and satisfaction variables.

APPENDICES

APPENDIX A

LETTER OF EXPLANATION FROM ASSOCIATE DEAN

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AFIT)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433



REPLY TO: LSGR (Maj McKemey/77769)
ATTN OF:

APR 12 1977

SUBJECT: Word Processing Center Organizational Assessment Questionnaire

TO:

1. The attached questionnaire was prepared by a research team at the Air Force Institute of Technology (AFIT), Wright-Patterson AFB, Ohio. The purpose of the questionnaire is to obtain data about the place you work as a human organization. Major Joyner and Captain King will use part of the data for completing their master's degree thesis at the School of Systems and Logistics. Overall results in terms of statistical summary data will be reported to Headquarters Air Force Logistics Command; however, individual responses to the questionnaire will be known only to the AFIT researchers and will not be provided to anyone else in order to protect your privacy.

2. You are asked to answer each question. Headquarters USAF has approved the questionnaire, and has assigned USAF Survey Control Number 77-69 to the survey. Your participation in the research is voluntary. However, your cooperation in providing the data will be appreciated and will be useful in evaluating the human organizational aspects of word processing centers.

3. Please return the completed questionnaire in the attached envelope within one week after receipt.

M. D. Martin
MARTIN D. MARTIN, Lt Col, USAF
Acting Associate Dean for
Graduate Education
School of Systems and Logistics

2 Atch
1. Questionnaire with
Privacy Act Statement
2. Return Envelope

Strength Through Knowledge

APPENDIX B
QUESTIONNAIRE COMPLETION INSTRUCTIONS

GENERAL INSTRUCTIONS

Most of the questions ask that you check one of several numbers that appear on a scale to the right of the item. You are to choose the one number that best matches the description of how you feel about the item. For example, if you were asked how much you agree with the statement, "I enjoy the weather in this town," and you feel that you agree, you would check the number under "agree" like this:

	<i>Strongly Disagree</i>		<i>Disagree</i>		<i>Slightly Disagree</i>		<i>Neither Agree nor Disagree</i>		<i>Slightly Agree</i>		<i>Agree</i>		<i>Strongly Agree</i>
I enjoy the weather in this town. ...	(1)	(2)	(3)	(4)	(5)	(6)	(7)						

Note that the scale descriptions may be different in different parts of the questionnaire. For example, they may ask not whether you agree or disagree, but perhaps whether you are satisfied or dissatisfied, or whether you think something to be likely or not likely to happen, etc.

So, be sure to read the special instructions that appear in boxes on each page. Be sure to read the scale descriptions before choosing your answers.

When you have finished, please place the questionnaire in the envelope, and return the envelope to AFIT/SLGR, Wright-Patterson Air Force Base, Dayton, Ohio.

* * * * *

GO RIGHT ON TO PART 1, next page ...

APPENDIX C
DEMOGRAPHIC INFORMATION QUESTIONS

1. Are you
 - a. Female
 - b. Male
2. What is your educational level?
(Indicate highest completed)
 - a. Some elementary school,
not a graduate
 - b. Completed elementary school
 - c. Some high school
 - d. Graduated from high school or
have G.E.D. completion
certificate
 - e. Some college or technical
training beyond high school
 - f. Graduated from college
(B.A., B.S., or other
bachelors degree)
 - g. Some graduate school
 - h. Graduate degree (Masters,
Ph.D., M.D., etc.)
3. How many years have you
been a federal civilian
employee?
 - a. Less than 1
 - b. 1 - 5
 - c. 5 - 10
 - d. 10 - 20
 - e. Over 20
4. What was your age on
your last birthday?
 - a. Under 21
 - b. 21 - 30
 - c. 31 - 50
 - d. Over 50
5. How long have you been
in your present job in
this organization (even
though your pay may have
changed)?
 - a. Less than 3 months
 - b. 3 - 11 months
 - c. 1 - 3 years
 - d. More than 3 years

APPENDIX D
HOPPOCK JOB SATISFACTION SURVEY

Which one of the following shows how much of the time you feel satisfied with your job?

- a. Never
- b. Seldom
- c. Occasionally
- d. About half of the time
- e. A good deal of the time
- f. Most of the time
- g. All the time

Choose the one of the following statements which best tells how well you like your job.

- a. I hate it
- b. I dislike it
- c. I don't like it
- d. I am indifferent to it
- e. I like it
- f. I am enthusiastic about it
- g. I love it

Which one of the following best tells how you feel about changing your job?

- a. I would quit this job at once if I could.
- b. I would take almost any other job in which I could earn as much as I am earning now.
- c. I would like to change both my job and my occupation.
- d. I would like to exchange my present job for another one.
- e. I am not eager to change my job, but I would do so if I could get a better job.
- f. I cannot think of any job for which I would exchange.
- g. I would not exchange my job for any other.

Which one of the following shows how you think you compare with other people?

- a. No one dislikes his job more than I dislike mine.
- b. I dislike my job much more than most people dislike theirs.
- c. I dislike my job more than most people dislike theirs.
- d. I like my job about as well as most people like theirs.
- e. I like my job better than most people like theirs.
- f. I like my job much better than most people like theirs.
- g. No one likes his job better than I like mine.

APPENDIX E
JOB DESCRIPTIVE INDEX

WORK

- ☐ Fascinating
- ☐ Routine
- ☐ Satisfying
- ☐ Boring
- ☐ Good
- ☐ Creative
- ☐ Respected
- ☐ Hot
- ☐ Pleasant
- ☐ Useful
- ☐ Tiresome
- ☐ Healthful
- ☐ Challenging
- ☐ On your feet
- ☐ Frustrating
- ☐ Simple
- ☐ Endless
- ☐ Gives a sense of accomplishment

CO-WORKERS

- ___ Stimulating
- ___ Boring
- ___ Slow
- ___ Ambitious
- ___ Stupid
- ___ Responsible
- ___ Fast
- ___ Intelligent
- ___ Easy to make enemies
- ___ Talk too much
- ___ Smart
- ___ Lazy
- ___ Unpleasant
- ___ No privacy
- ___ Active
- ___ Narrow interests
- ___ Loyal
- ___ Hard to meet

SUPERVISION

- ___ Asks my advice
- ___ Hard to please
- ___ Impolite
- ___ Praises good work
- ___ Tactful
- ___ Influential
- ___ Up-to-date
- ___ Doesn't supervise enough
- ___ Quick tempered
- ___ Tells me where I stand
- ___ Annoying
- ___ Stubborn
- ___ Knows job well
- ___ Bad
- ___ Intelligent
- ___ Leaves me on my own
- ___ Lazy
- ___ Around when needed

PROMOTION

- ☐ Good opportunity for advancement
- ☐ Opportunity somewhat limited
- ☐ Promotion on ability
- ☐ Dead-end job
- ☐ Good chance for promotion
- ☐ Unfair promotion policy
- ☐ Infrequent promotions
- ☐ Regular promotions
- ☐ Fairly good chance for promotion

PAY

- ☐ Income adequate for normal expenses
- ☐ Satisfactory retirement plan
- ☐ Barely live on income
- ☐ Income provides luxuries
- ☐ Insecure
- ☐ Bad
- ☐ Less than I deserve
- ☐ Highly paid
- ☐ Underpaid

APPENDIX F
TURNOVER PROBABILITY QUESTION

What are your intentions regarding staying or leaving your present job situation?

- a. I definitely will leave -- I have submitted or will submit a letter of resignation.
- b. I definitely will leave -- I have submitted or will submit a request for lateral transfer.
- c. I am leaning toward resigning or requesting a transfer.
- d. I am undecided at this time whether to stay or leave.
- e. I am leaning toward staying in my present job.
- f. I definitely intend to stay in my present job situation.

APPENDIX G
PRIVACY ACT STATEMENT

PRIVACY STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

(1) 10 U.S.C., 80/12, Secretary of the Air Force, Powers, Duties, Delegation by Compensation; and/or

(2) EO 93/97, 22 Nov 43, Numbering System for Federal Accounts Relating to Individual Persons; and/or

(3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel; and/or

(4) AFR 30-23, 22 Sep 76, The Air Force Personnel Survey Program.

b. Principal purposes. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine uses. The survey data will be converted to information for use in research management related problems. Results of the research, based on the data provided, will be included in written master's theses and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

APPENDIX H
NORMATIVE RESPONSES TO THE JDI

WORK

Y* Fascinating
N Routine
Y Satisfying
N Boring
Y Good
Y Creative
Y Respected
N Hot
Y Pleasant
Y Useful
N Tiresome
Y Healthful
Y Challenging
N On your feet
N Frustrating
N Simple
N Endless
Y Gives a sense of
accomplishment

CO-WORKERS

Y Stimulating
N Boring
N Slow
Y Ambitious
N Stupid
Y Responsible
Y Fast
Y Intelligent
N Easy to make enemies
N Talk too much
Y Smart
N Lazy
N Unpleasant
N No privacy
Y Active
N Narrow interests
Y Loyal
N Hard to meet

*The response shown beside each item is the one scored in the "satisfied" direction for each scale (35:107).

SUPERVISION

Y* Asks my advice
N Hard to please
N Impolite
Y Praises good work
Y Tactful
Y Influential
Y Up-to-date
N Doesn't supervise enough
N Quick tempered
Y Tells me where I stand
N Annoying
N Stubborn
Y Knows job well
N Bad
Y Intelligent
Y Leaves me on my own
N Lazy
Y Around when needed

PROMOTION

Y Good opportunity for advancement
N Opportunity somewhat limited
Y Promotion on ability
N Dead-end job
Y Good chance for promotion
N Unfair promotion policy
N Infrequent promotions
Y Regular promotions
Y Fairly good chance for promotion

PAY

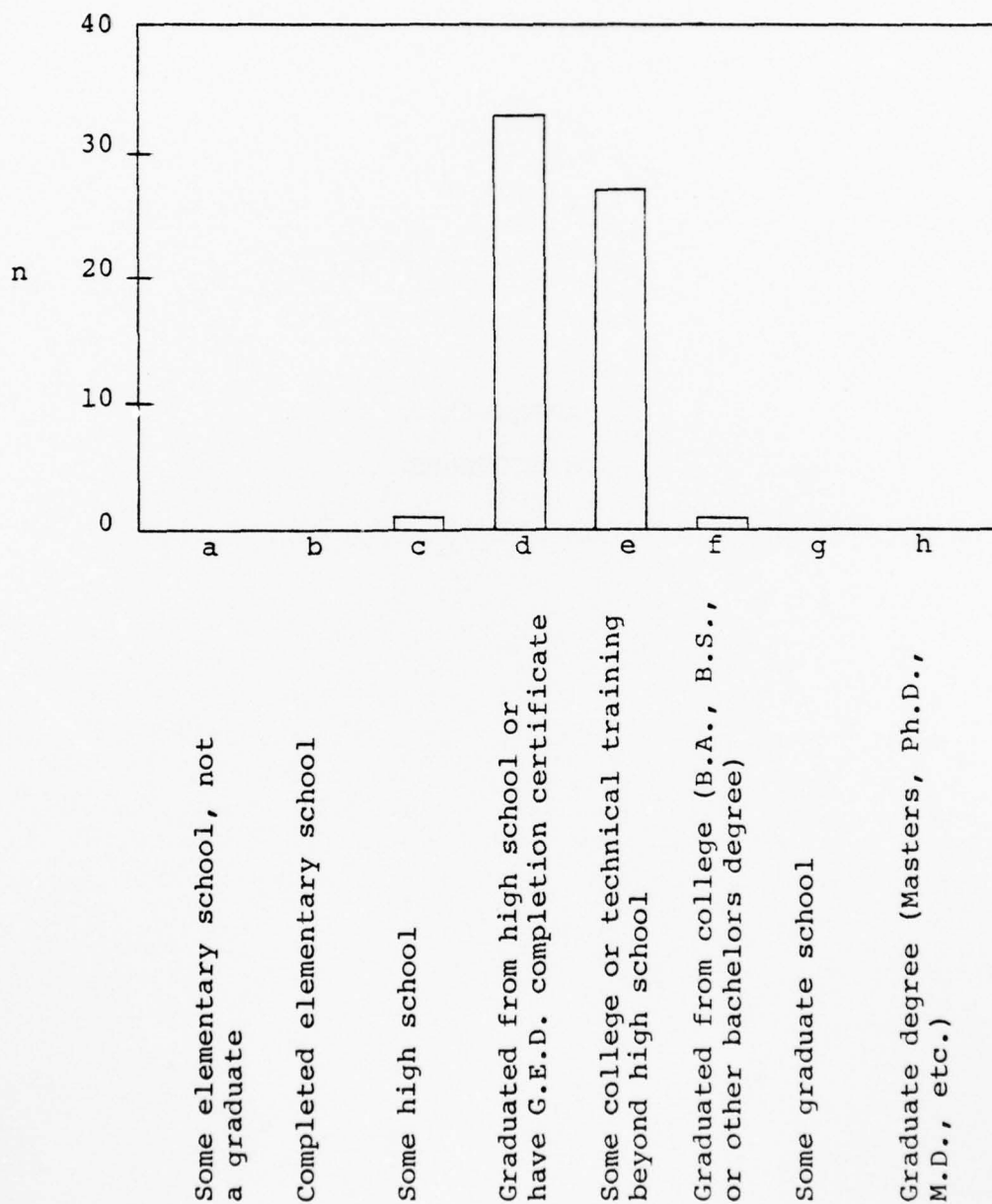
Y Income adequate for normal expenses
Y Satisfactory retirement plan
N Barely live on income
Y Income provides luxuries
N Insecure
N Bad
N Less than I deserve
Y Highly paid
N Underpaid

*The response shown beside each item is the one scored in the "satisfied" direction for each scale (35:107).

APPENDIX I
HISTOGRAMS

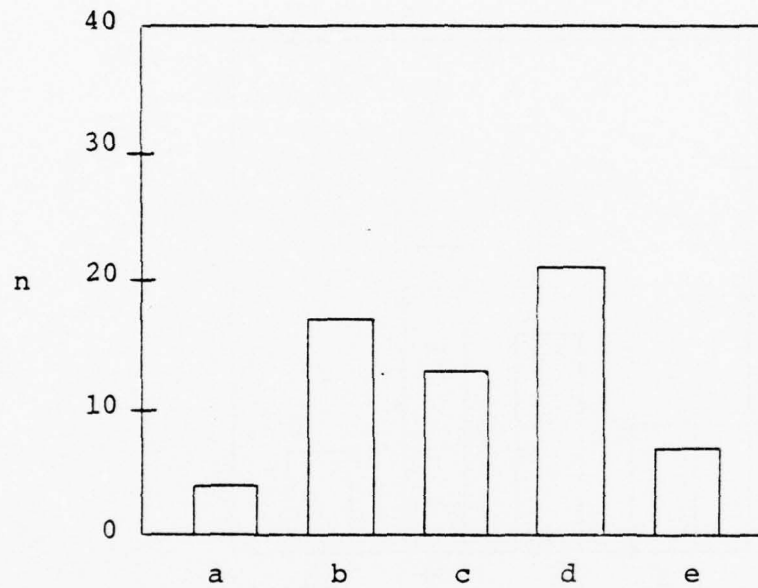
Question 2:

What is your education level? (Indicate highest completed)



Question 3:

How many years have you been a federal civilian employee?



Less than 1

1 to 5

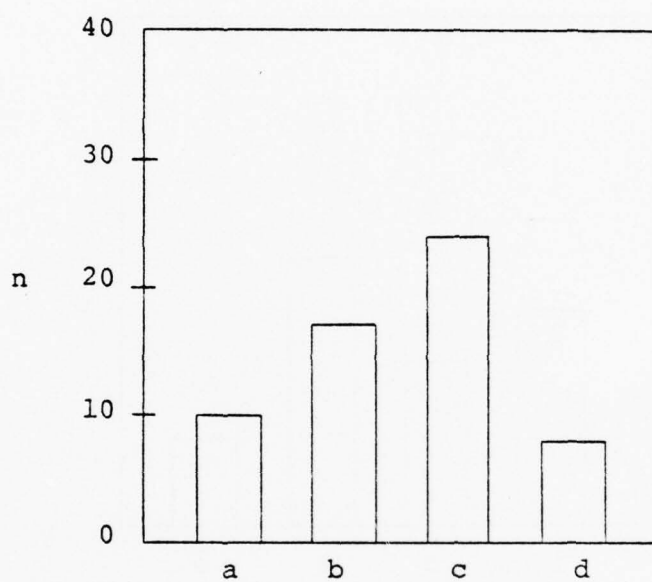
5 to 10

10 to 20

Over 20

Question 4:

What was your age on your last birthday?



Under 21

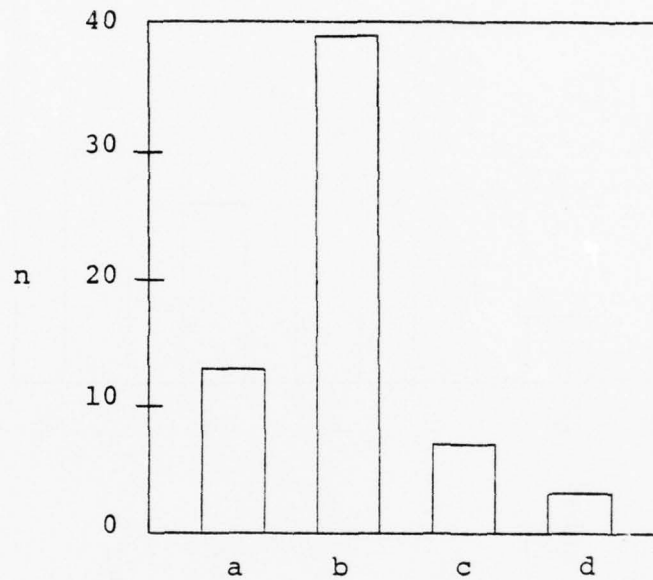
21 to 30

31 to 50

Over 50

Question 5:

How long have you been in your present job in this organization (even though your pay may have been changed)?



Less than 3 months

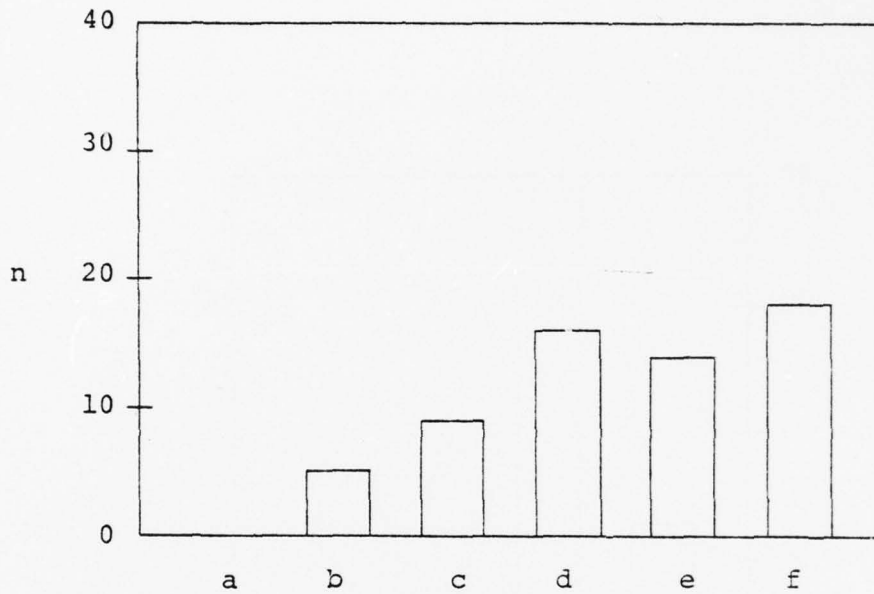
3 to 12 months

1 to 3 years

More than 3 years

Question 6:

What are your intentions regarding staying or leaving your present job situation?



I definately will leave--I have submitted or will submit a letter of resignation

I definately will leave--I have submitted or will submit a request for lateral transfer

I am leaning toward resigning or requesting a transfer

I am undecided at this time whether to stay or leave

I am leaning toward staying in my present job

I definately intend to stay in my present job situation

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AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHO--ETC F/G 5/9
A BEHAVIORAL ASSESSMENT OF WORD PROCESSING CENTERS.(U)
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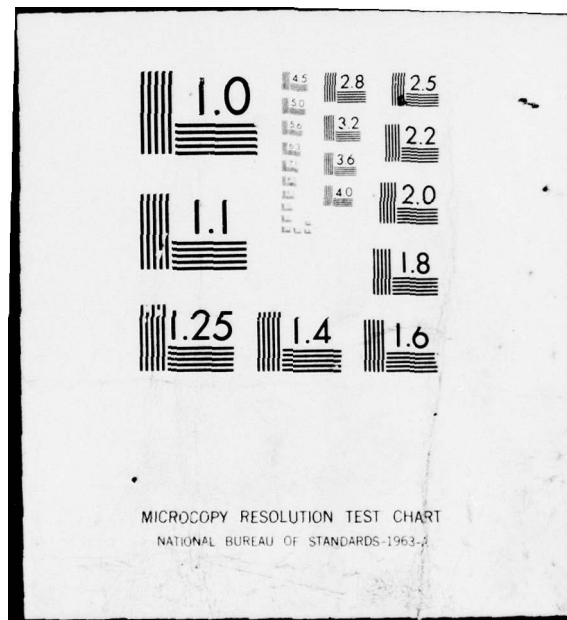
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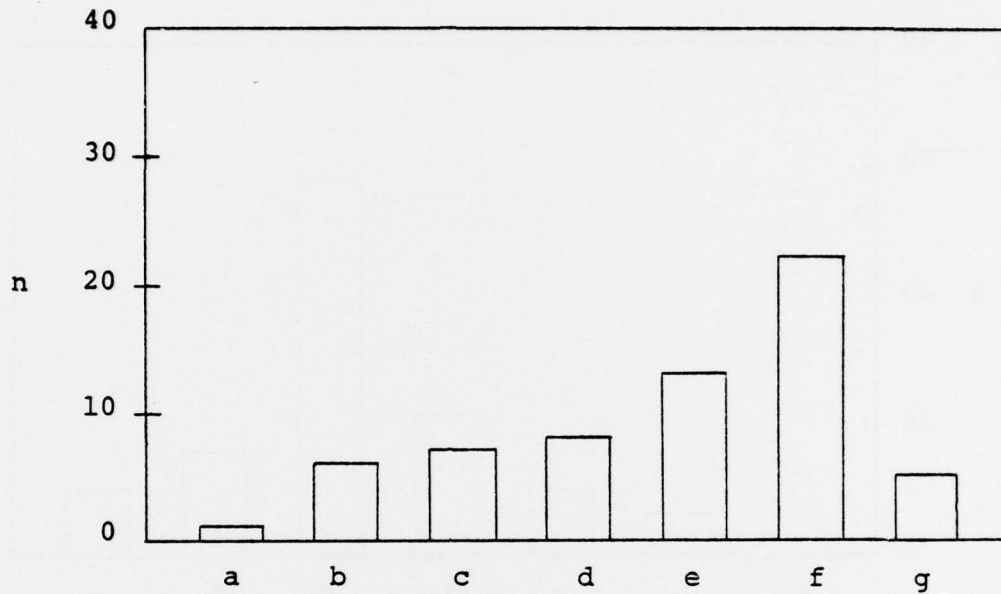


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Question 7:

Which one of the following shows how much of the time you feel satisfied with your job.



Never

Seldom

Occasionally

About half of the time

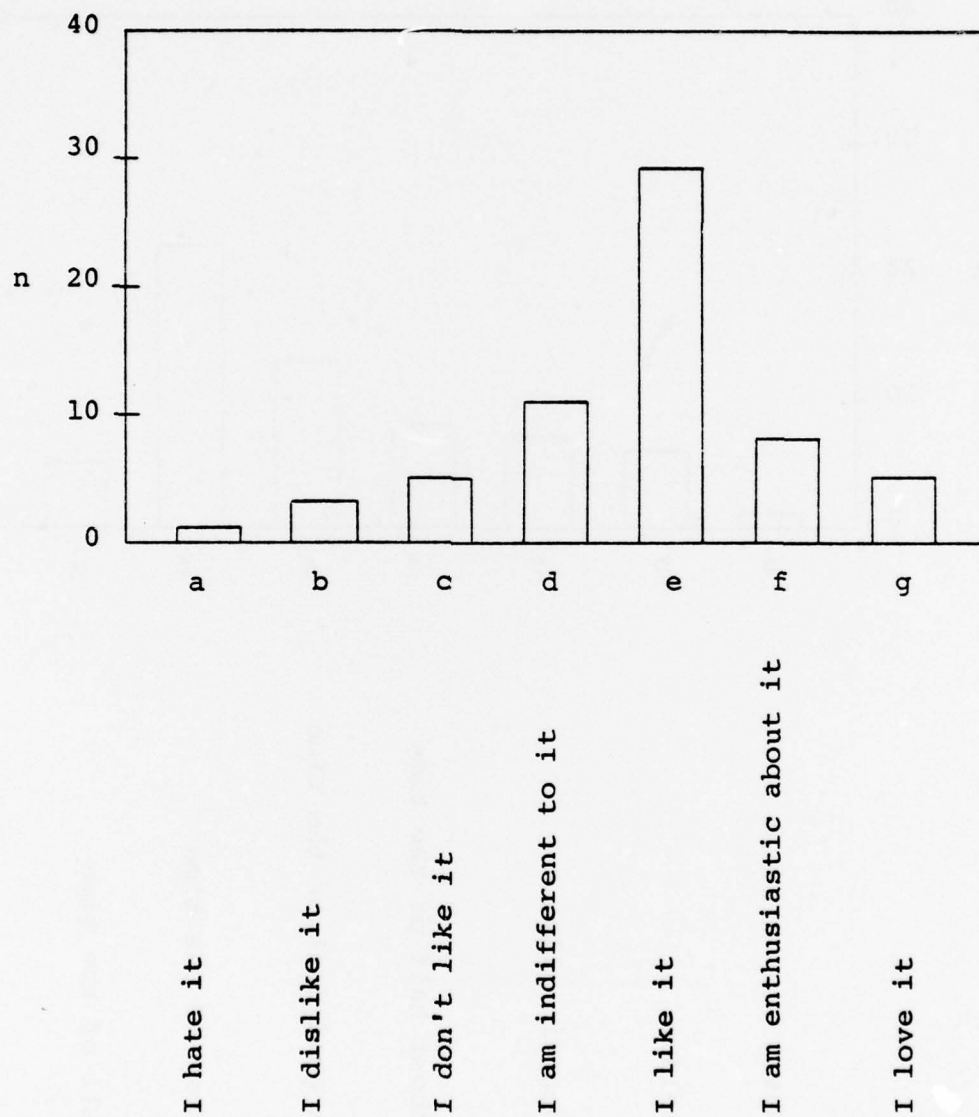
A good deal of the time

Most of the time

All of the time

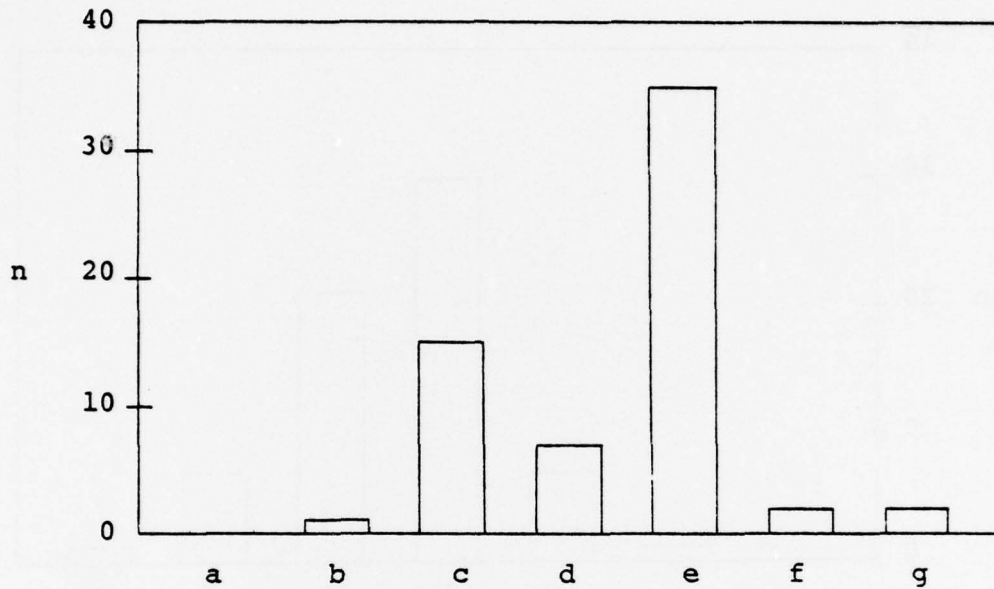
Question 8:

Choose the one of the following statements which best tells how well you like your job.



Question 9:

Which one of the following best tells how you feel about changing your job?



I would quit this job at once if I could

I would take almost any other job in which I could earn as much as I am now earning

I would like to change both my job and my occupation

I would like to exchange my present job for another one

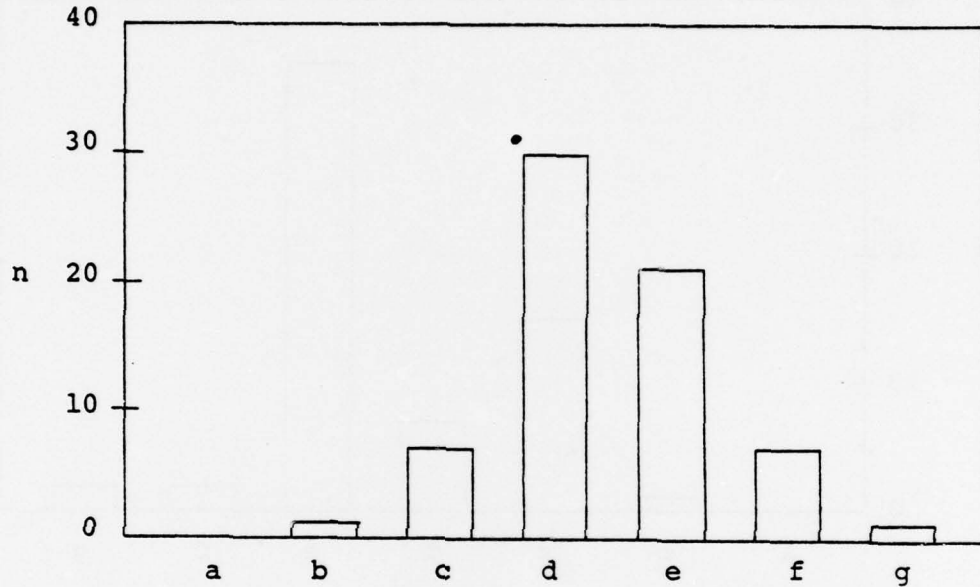
I am not eager to change my job, but I would do so if I could get a better job

I cannot think of any job for which I would exchange

I would not exchange my job for any other

Question 10:

Which one of the following shows how you think you compare with other people?



No one dislikes his job more than I dislike mine

I dislike my job much more than most people dislike theirs

I dislike my job more than most people dislike theirs

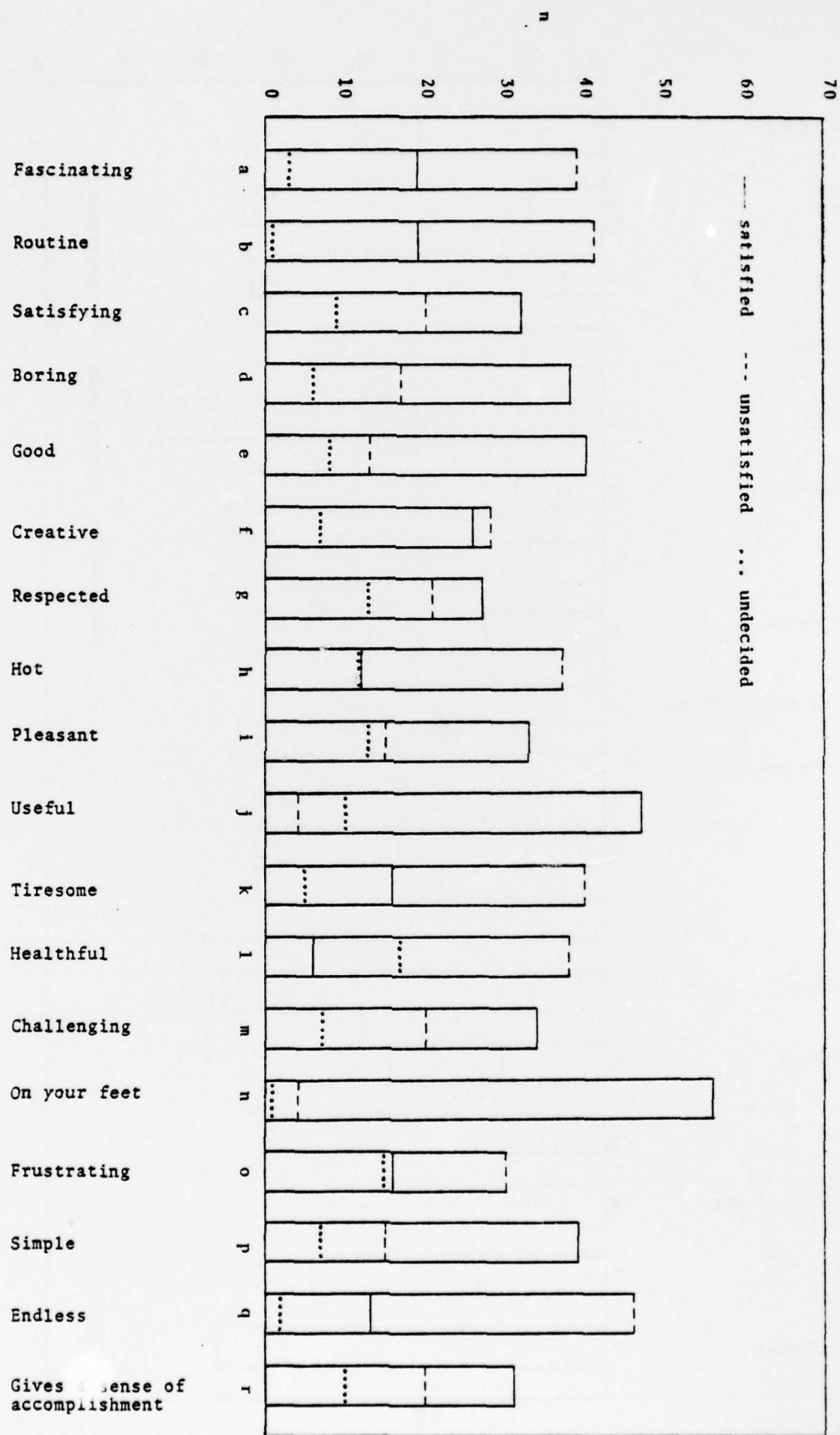
I like my job about as well as most people like theirs

I like my job better than most people like theirs

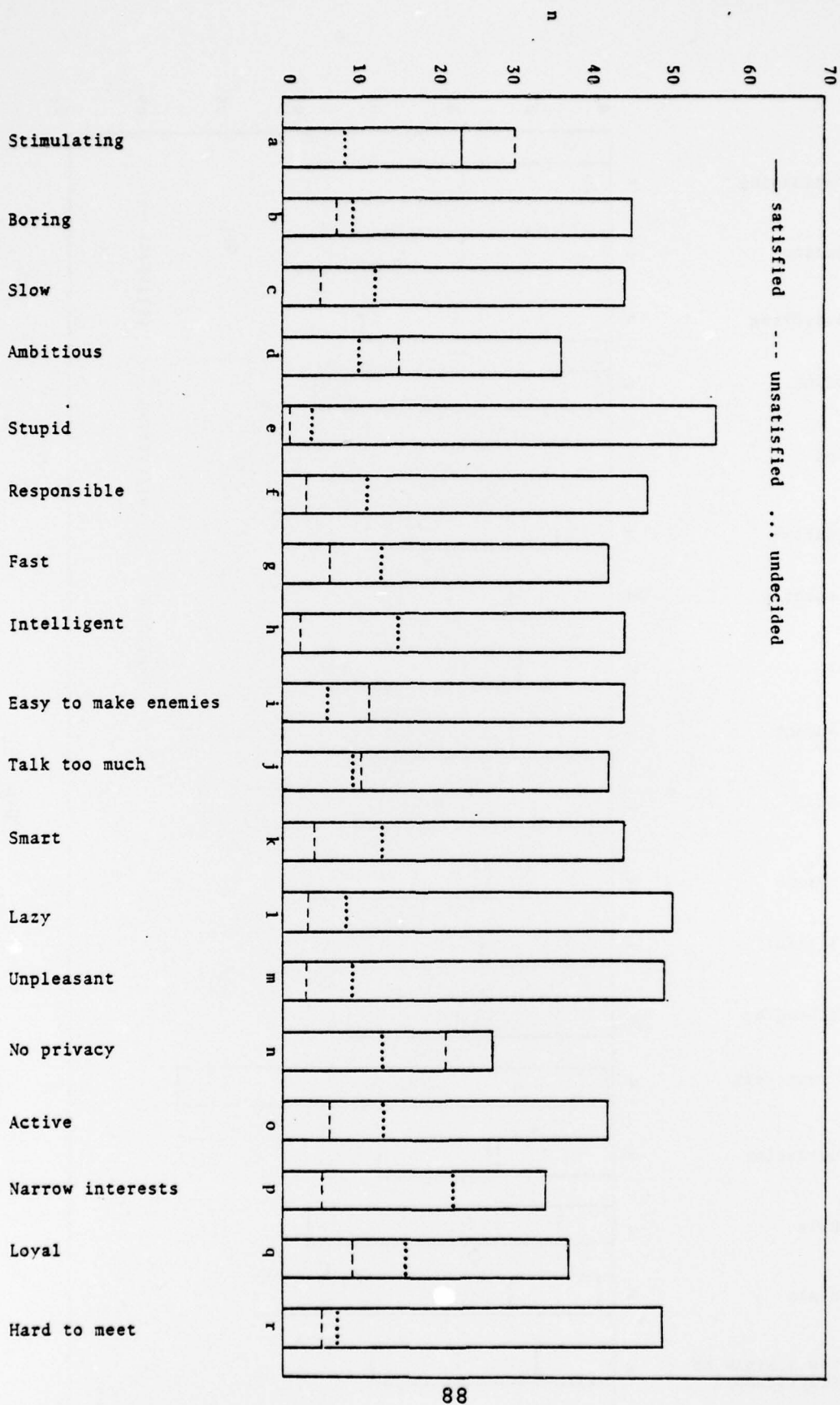
I like my job much better than most people like theirs

No one likes his job better than I like mine

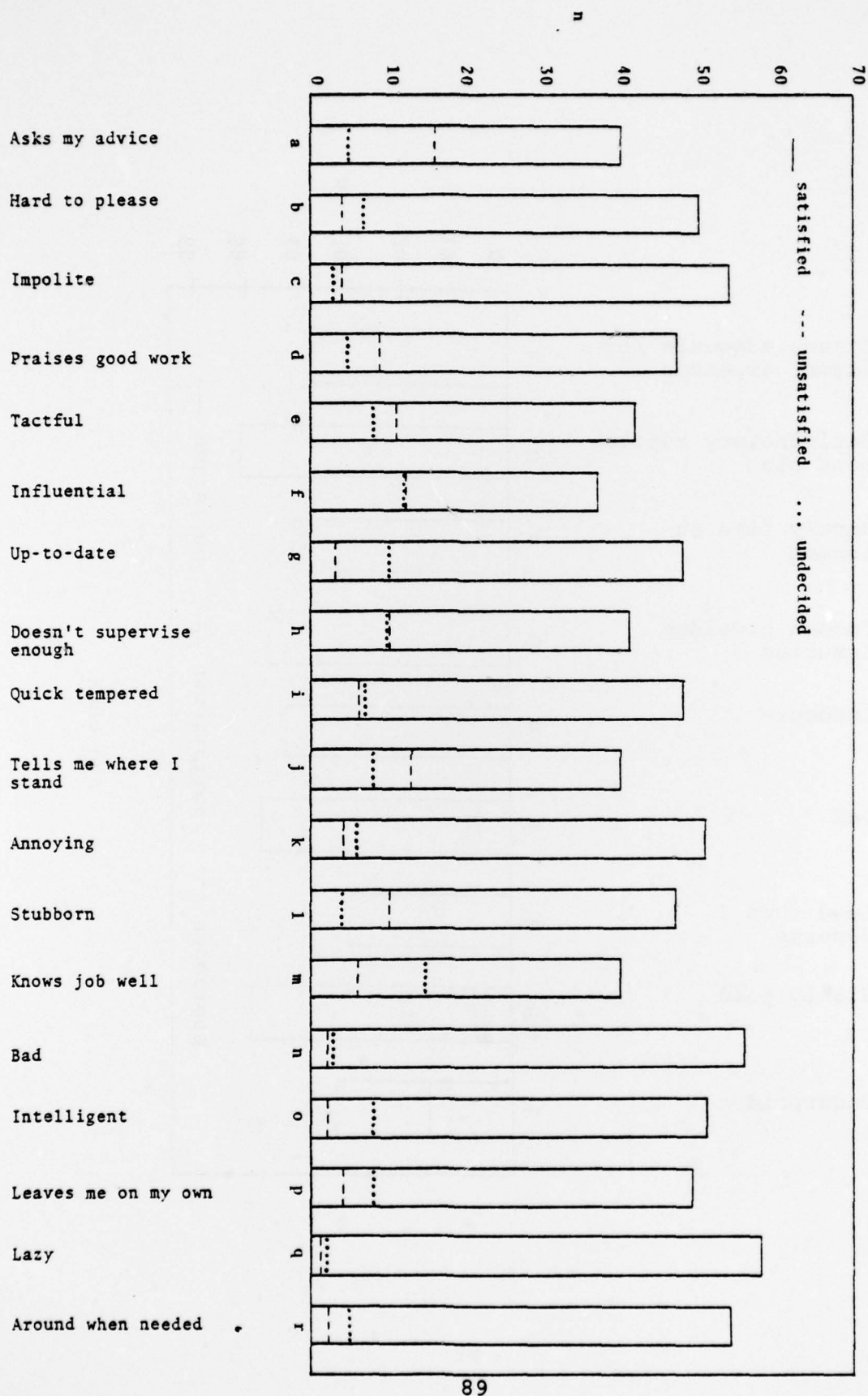
YOUR WORK



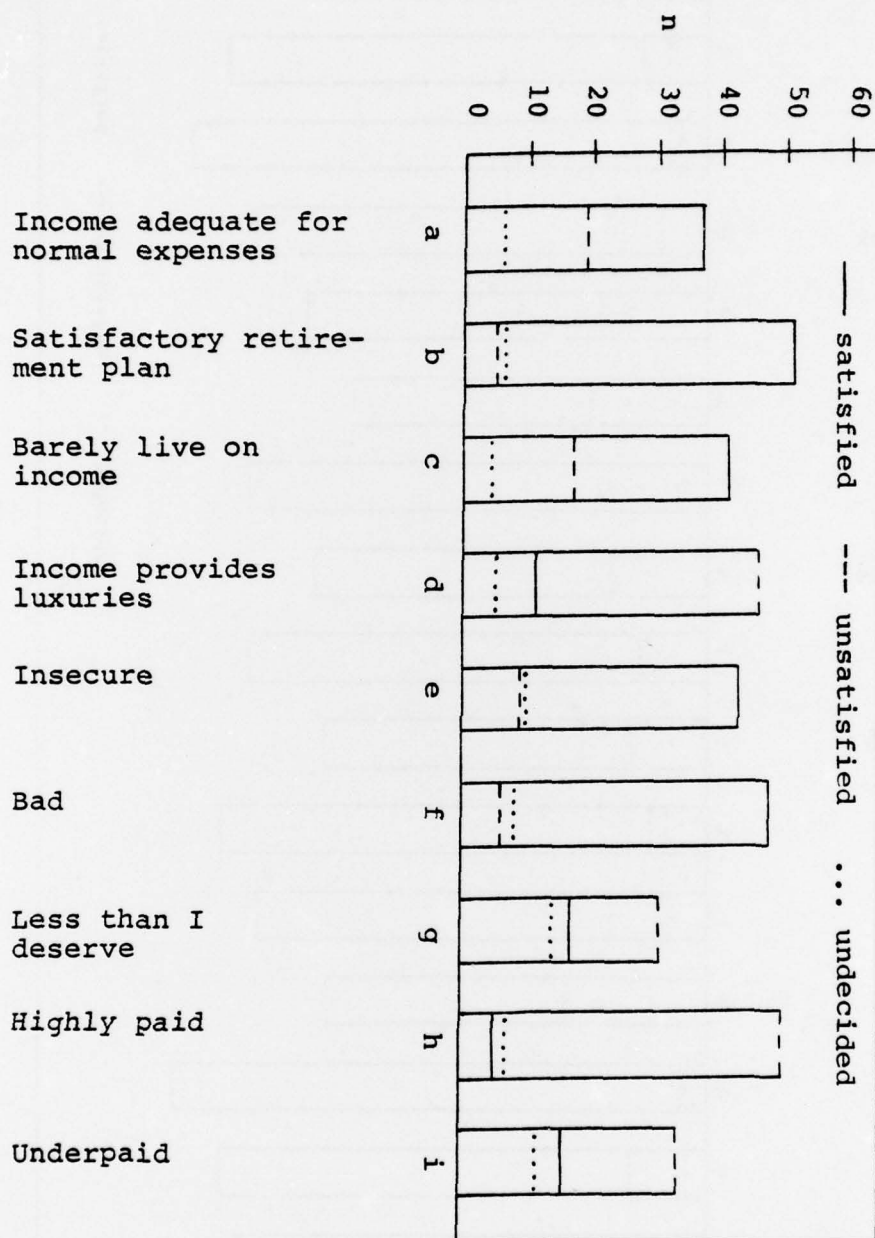
YOUR CO-WORKERS



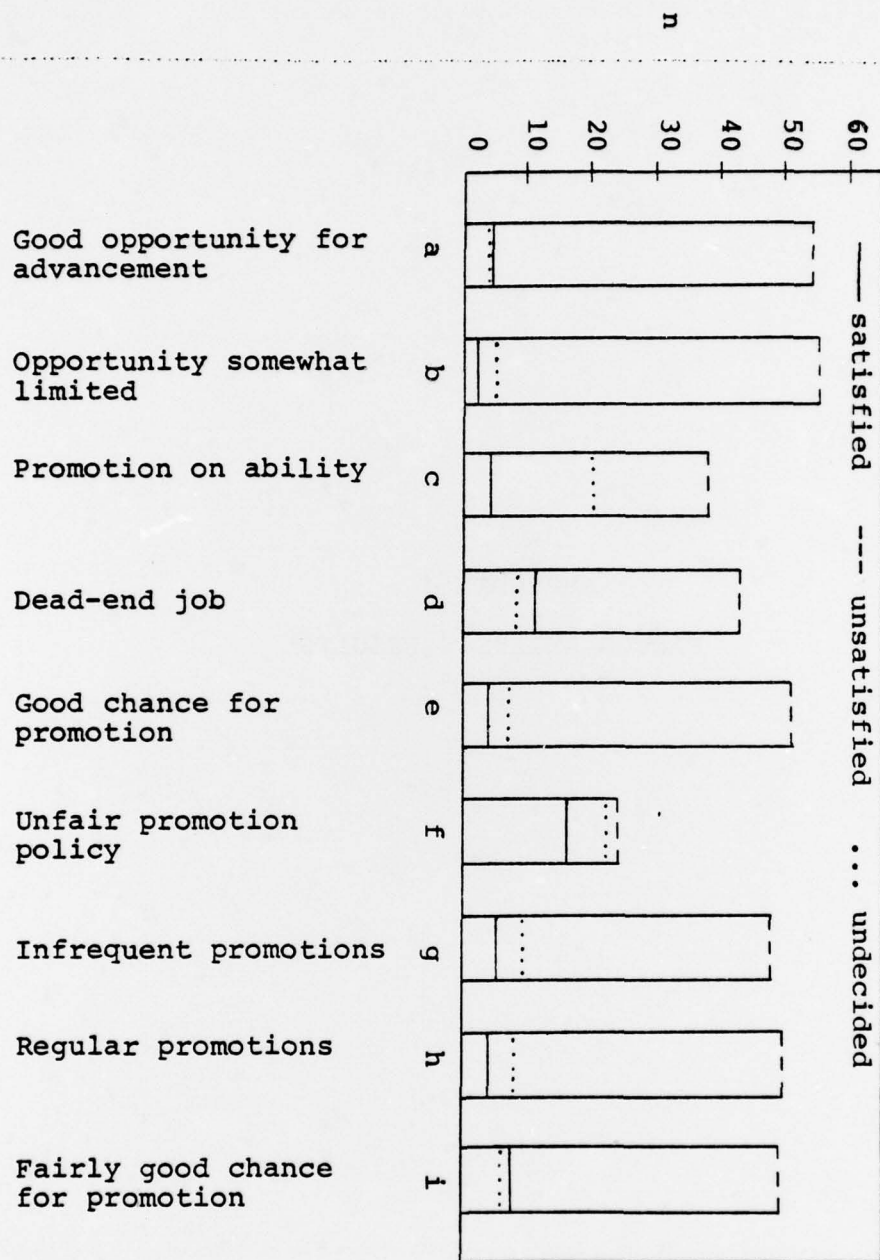
YOUR SUPERVISION



YOUR PAY



YOUR PROMOTION OPPORTUNITIES



APPENDIX J
FACTOR ANALYSIS RESULTS

Variable	Factor 1 Supervisor	Factor 2 Co-worker	Factor 3 Promotion	Factor 4 Work	Factor 5 Pay	Communality
Var01	0.06	0.47	0.11	0.53	-0.13	0.54
Var02	0.01	-0.03	-0.09	0.47	0.05	0.23
Var03	0.22	0.07	0.32	0.60	0.13	0.54
Var04	0.17	0.12	0.10	0.72	-0.14	0.60
Var05	0.22	0.14	0.13	0.47	0.03	0.31
Var06	0.01	0.17	0.08	0.67	-0.28	0.57
Var07	0.26	-0.00	0.10	0.39	0.07	0.24
Var08	-0.04	0.01	0.04	0.26	0.31	0.17
Var09	0.35	0.37	0.15	0.46	-0.11	0.51
Var10	0.18	0.30	0.06	0.31	0.14	0.24
Var11	0.13	0.02	-0.01	0.66	0.26	0.52
Var12	-0.04	-0.03	0.41	0.36	0.10	0.30
Var13	-0.00	0.08	-0.03	0.49	-0.45	0.45
Var14	-0.11	-0.20	-0.24	0.03	0.11	0.12
Var15	0.20	-0.07	-0.08	0.54	0.17	0.38
Var16	0.18	0.06	-0.05	0.17	-0.04	0.07
Var17	0.18	0.01	0.10	0.33	0.21	0.20
Var18	0.23	0.33	0.10	0.66	-0.04	0.61
Var19	0.47	0.13	-0.25	-0.10	-0.10	0.32
Var20	0.72	-0.02	0.10	0.12	-0.01	0.54
Var21	0.72	-0.08	0.07	0.19	0.05	0.57
Var22	0.59	0.03	-0.10	0.28	0.14	0.46
Var23	0.73	0.03	0.05	-0.02	-0.02	0.54
Var24	0.60	0.13	0.06	0.14	-0.15	0.42
Var25	0.63	-0.12	0.04	0.27	-0.07	0.49
Var26	0.33	-0.02	-0.08	0.34	0.02	0.23
Var27	0.66	0.20	0.05	-0.17	-0.09	0.51
Var28	0.54	-0.09	0.06	0.28	-0.11	0.40
Var29	0.60	-0.02	-0.02	0.18	-0.02	0.40
Var30	0.59	0.12	0.14	-0.12	0.05	0.40

Variable	Factor 1 Supervisor	Factor 2 Co-worker	Factor 3 Promotion	Factor 4 Work	Factor 5 Pay	Communality
Var31	0.32	-0.12	0.15	0.47	-0.21	0.40
Var32	0.66	0.01	0.07	0.09	0.06	0.45
Var33	0.68	0.17	0.04	0.09	-0.04	0.51
Var34	-0.03	-0.14	-0.18	0.03	0.02	0.06
Var35	0.29	-0.23	0.06	0.27	-0.13	0.23
Var36	0.62	-0.22	0.06	0.23	0.03	0.50
Var37	0.06	0.52	0.21	0.07	-0.06	0.33
Var38	0.08	0.31	0.10	-0.02	0.16	0.14
Var39	-0.01	0.50	0.22	-0.11	0.07	0.31
Var40	0.06	0.68	0.08	-0.02	-0.07	0.48
Var41	-0.05	0.35	0.16	-0.02	0.01	0.15
Var42	-0.09	0.52	0.09	0.19	0.03	0.32
Var43	-0.07	0.72	0.03	-0.02	0.02	0.52
Var44	0.21	0.65	-0.06	0.10	0.02	0.48
Var45	-0.05	0.40	-0.03	0.11	0.05	0.18
Var46	-0.11	0.29	-0.10	-0.05	0.15	0.13
Var47	0.00	0.77	-0.09	-0.02	0.10	0.62
Var48	-0.09	0.52	-0.13	0.10	0.14	0.32
Var49	-0.12	0.55	-0.05	0.07	0.10	0.34
Var50	-0.08	0.03	0.03	0.16	-0.09	0.04
Var51	0.14	0.58	-0.03	0.13	-0.08	0.38
Var52	0.16	0.60	-0.33	-0.02	0.05	0.50
Var53	0.06	0.74	-0.19	0.10	-0.00	0.59
Var54	0.38	0.55	-0.08	-0.08	0.22	0.50
Var55	-0.02	0.24	0.01	-0.02	0.64	0.47
Var56	0.19	0.36	0.13	0.07	0.43	0.37
Var57	-0.03	0.35	0.21	-0.01	0.64	0.58
Var58	0.10	0.19	0.22	-0.34	0.37	0.35
Var59	-0.09	0.07	0.02	0.06	0.69	0.50
Var60	-0.01	0.09	0.05	-0.01	0.71	0.51

Variable	Factor 1 Supervisor	Factor 2 Co-worker	Factor 3 Promotion	Factor 4 Work	Factor 5 Pay	Communality
Var61	-0.08	-0.14	0.03	0.01	0.62	0.41
Var62	0.01	0.12	0.17	-0.30	0.38	0.28
Var63	-0.11	-0.00	0.01	0.03	0.64	0.43
Var64	0.02	-0.01	0.90	0.03	0.06	0.81
Var65	0.07	0.06	0.83	0.08	0.07	0.70
Var66	0.16	-0.07	0.68	-0.03	0.01	0.50
Var67	0.03	0.10	0.65	0.17	-0.02	0.46
Var68	0.13	-0.04	0.91	0.02	0.05	0.84
Var69	-0.16	-0.20	0.37	0.27	0.08	0.29
Var70	-0.03	0.02	0.69	-0.06	0.09	0.49
Var71	-0.05	0.00	0.89	0.08	0.13	0.81
Var72	0.09	-0.08	0.74	0.19	0.19	0.63
Eigenvalue	10.32	7.15	6.58	4.51	3.84	
Pct of Var	14.3	9.9	9.1	6.3	5.3	

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